

CENTRAL TEST AND EVALUATION INVESTMENT PROGRAM



JOINT IMPROVEMENT AND MODERNIZATION PROJECTS

PLANNING AND EXECUTION GUIDE

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FOREWORD

This updated guide has been prepared to help participants in the test and evaluation (T&E) community in understanding both the purpose of the Central Test and Evaluation Investment Program (CTEIP) and how the program is managed and administered. Included in the guide are specific requirements for the nomination, selection, documentation, and administration of CTEIP projects. Major changes reflected in this update include a new description of the T&E investment planning process and new guidance on required project documentation. As in previous versions of this guide, the focus is on projects funded under the Joint Improvement and Modernization (JIM) initiative. Similar guides are available for Test Technology Development and Demonstration (TTD&D) and the Resource Enhancement Project (REP), which provide procedures and guidance for subproject selection, funding, and execution oversight for these CTEIP initiatives. While these guides are issued separately, they are also provided in the Appendices of this document.

The first section of the guide, Program Description, provides an overview of CTEIP's history, mission, objectives, and structure. The second section, CTEIP Planning Process, discusses how projects are planned, programmed, submitted, reviewed, and evaluated. The third section, CTEIP Project Execution, discusses the management of approved projects as well as other technical and financial aspects of the program. Additional information and specific documentation formats are provided in the Appendices.

Dwayne Cox
CTEIP Program Element Manager

1.0 PROGRAM DESCRIPTION

1.1 Background

In 1989, to improve the coordination and planning of T&E facility investments, the Office of the Secretary of Defense (OSD) enhanced its management and oversight of the Department of Defense (DoD) Test and Evaluation (T&E) capability base by establishing the Central Test and Evaluation Investment Program (CTEIP). The CTEIP was designed to provide a corporate investment approach to Service and Defense Agency T&E needs. See Appendix A for a full description of the management structure of the CTEIP. Allocating testing resources on the basis of corporate rather than Service-level criticality promotes increased interoperability and interconnectivity among test centers and ranges and focuses T&E expertise on test matters. Unwarranted duplication of effort is eliminated, and joint initiatives are promoted. Individual investments take the form of projects that are assigned to the Services and Defense Agencies for execution and implementation.

1.2 Objectives

CTEIP's objectives are to:

- a. Support projects that apply state-of-the-art technologies to correct deficiencies in DoD T&E capabilities.
- b. Maximize efficient inter-Service use of test assets by improving interoperability and interconnectivity among test centers, ranges, and facilities.
- c. Establish and maintain a T&E technology development program to investigate, develop, and produce prototypes of advanced technologies for application to T&E that add technical capability and value to the T&E program as well as reduce manpower requirements, operating expenses, maintenance requirements, and other costs.
- d. Achieve consistency, commonality, and interoperability across the Services in targets, test instrumentation, and threat simulators.
- e. Develop, validate, and integrate modeling and simulation with open-air testing to provide timely, accurate, and cost-effective results.
- f. Exploit mobile test instrumentation capabilities as an alternative to fixed facilities where economically and technically feasible.
- g. Provide resources to respond to critical near-term operational test capability shortfalls.

1.3 Program Structure

The CTEIP Program Element comprises three categories of projects:

- a. Joint Improvement and Modernization (JIM) projects, which provide investments to improve the test capabilities base.
- b. Test Technology Development and Demonstration (TTD&D) project, which facilitates

- the transition of technology from laboratories to enhanced test capabilities and reduces technical risk in testing of future defense systems.
- c. Resource Enhancement Project (REP), which funds the development of quick-reaction, near-term solutions to operational test shortfalls in support of ongoing test programs.

The JIM projects represent critically needed test and evaluation investments both in the development of advanced technologies needed to meet the testing of increasingly complex and sophisticated weapon systems and in the transition of these technologies into test capabilities. Project subject matters include automated data collection, processing, display, and archiving; smart munitions testing; simulation and end-game measurement; testing of advanced materials application; test design; and advanced sensors and space systems. A special focus within CTEIP continues to be placed on the potential electronic linking of test ranges and centers to improve test realism, increase testing efficiency, and support joint training.

The TTD&D Project is intended to facilitate the transition of mature technologies from laboratories to satisfy test and evaluation needs. Technology projects proposed by the Services and Defense Agencies are reviewed by OSD. Prime consideration is given to projects that show the potential for high payback in terms of better data for decision making, increased test efficiencies, greater safety, labor savings, and reduced maintenance costs. Through the TTD&D Project, the T&E community is provided with the equipment and methods to test and evaluate new weapons systems that are evolving from advanced research and development initiatives.

The REP is intended to resolve near-term shortfalls in operational test capabilities that require immediate development and funding. The requirements for these capabilities are generally not known more than 3 years in advance of a critical test requirement. Funding these REP subprojects under CTEIP provides the opportunity to coordinate and integrate near-term test requirements with DoD-wide T&E investment planning and ensures that developments take into consideration other programs that may have similar testing requirements.

CTEIP projects will be identified by functional areas consistent with the expertise areas of the Test and Evaluation Reliance and Investment Board (TERIB). These expertise areas also reflect how test capabilities are grouped throughout DoD and facilitate the selection and review of projects. The areas and their definitions are:

- a. Air Combat, which covers fixed/rotary wing aircraft and T&E support aircraft. This area includes fixed wing aircraft, rotary wing aircraft, unmanned air vehicles, and cruise missiles up to the terminal stage, but excludes munitions aspects. T&E support aircraft are typically modified extensively and predominantly used in a T&E specialized support role.
- b. Land Combat, which covers land vehicles and chemical warfare/chemical and biological defense (CW/CBD). Land vehicle systems include self-propelled or towed systems and components as well as the individual soldier. CW/CBD includes chemical retaliatory, incapacitating, and riot control agents and herbicides and their delivery systems; chemical and

biological agent contamination; chemical and biological agent detection, identification, and warning; individual protective items and clothing; collective protection; general chemical and biological threat assessment; and smoke and obscurants.

- c. Sea Combat, which covers a broad range of systems and requires an equally broad range of test capabilities. Included are surface and undersea vehicle hull, mechanical and electrical systems for surface ships, submarines, and undersea unmanned vehicles; signature and silencing, including acoustic and non-acoustic; propulsors; combat systems, including guns and missile launchers but excluding projectiles and missiles, for anti-submarine warfare (ASW), anti-air warfare (AAW), anti-surface warfare (ASUW), discrete self-defense that is not integral to other combat systems, strike, and theater air defense; maritime Command, Control, Communication, Computers and Intelligence (C⁴I) systems, including shipboard and associated land-based radio frequency and satellite communications/switching networks, and tactical data processing and displays; ship-based space and electronic warfare systems; undersea surveillance systems, including land-based components thereof; ship-based aircraft ASW/ASUW, including unmanned aerial vehicles (UAVs) but excluding the airframe and flight support systems; mine warfare systems, including airborne systems; and sea-based special warfare/explosive ordnance disposal systems.
- d. Space Combat, which covers DoD ground and space based test capabilities which perform test and evaluation of weapon systems and components in a duplicated or simulated space and ballistic missile environment, including ground based testing infrastructures and space and ballistic launch facilities and ranges.
- e. Common Range Instrumentation, which covers Common Airborne Instrumentation Systems, Global Position System/Time Space Position Information (TSPI), National Airspace Program, and Common Range Instrumentation Systems. These systems are normally associated with air traffic control; position tracking; and data acquisition, recording reduction, and reporting.
- f. Electronic Combat, which covers electronic combat systems that span the entire electromagnetic spectrum, both offensive and defensive in nature. Electronic Combat includes subsystems, technologies, and techniques for electronic warfare and suppression of enemy air defense. It also includes electronic countermeasures such as jamming, electronic support measures such as threat warning, and electronic counter-countermeasures associated with offensive avionics.
- g. Armament and Munitions, which covers guns/munitions, armament/missiles, electric gun, and directed energy weapons. Guns/Munitions includes guns, howitzers, mortars, machine guns, grenade launchers, small arms, and their munitions. Armament/Missiles coverage includes air-to-air, air-to-surface, and surface-to-air weapons, as well as surface-to-surface missiles and TMD capabilities. Electric Gun and Directed Energy Weapon programs are currently in the laboratory technology and component research and development phase.
- h. Targets, which differs significantly from most other areas in that targets are expendable test

resources and not test investments. Targets include aerial targets, land and sea surface targets, ballistic missile targets, anti-radiation missile targets. Non-expendable target assets are also included, such as target Command and Control (C²) systems, scoring systems, and target threat emitters.

- i. Test Environments, which covers those capabilities replicating the normal and extreme of land, air, water, and space operating regimes. This includes air breathing engines, climatic, nuclear weapons effects, aero-thermodynamics, and non-air breathing propulsion test facilities. Supersonic sled tracks are also included in this area.
- j. Command, Control, Communications, Computers, and Intelligence (C⁴I), which covers command, control, communications, computer (automated information systems), and intelligence systems or equipment that assist a commander in planning, directing, and controlling forces in both war and peace. C⁴I systems normally consist of some combination of hardware, software, personnel, facilities, and procedures. Their function is to collect, process, transfer, integrate, store, produce, disseminate, and display information. Imbedded software normally associated with non-C⁴I systems is excluded from this area.

2.0 CTEIP PLANNING PROCESS.

The process described in this section, as well as that described in Section 3.0, is applicable to JIM projects only. The separate processes in place for the planning and execution of the REP and TTD&D projects are contained in their respective planning and guidance documents. These documents are issued under separate cover, but are included as Appendices M and M to this Planning and Execution Guide.

2.1 T&E Investment Planning Process

The CTEIP investment planning process is integrated and synchronized with the overall DoD T&E investment planning process, which in turn, is integrated and synchronized with the overall Planning, Programming, and Budgeting System (PPBS). The objective of the CTEIP process is to have a set of high priority T&E investments identified, reviewed, evaluated, and approved for inclusion into each cycle of the Program Objective Memorandum (POM). DoD T&E investment planning is a continuing process of determining test requirements (Needs) and selecting specific test investments (Solutions) that meet the Department's shortfalls in test capabilities. To respond to the established PPBS timetable, an integrated process has been established with participation from the Director, Test, Systems Engineering and Evaluation (DTSE&E), the T&E Executive Agent (T&E EA), and the Services/Defense Agencies. The time frame between the initiation of the Needs Call, which is the first step in the T&E planning process, and the first day of the fiscal year for execution of a project that satisfies the Need is about 3 years. The DoD T&E Needs and

The Test Investment Planning Process

Concurrent Process

CY1							CY2												CY3	
J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F

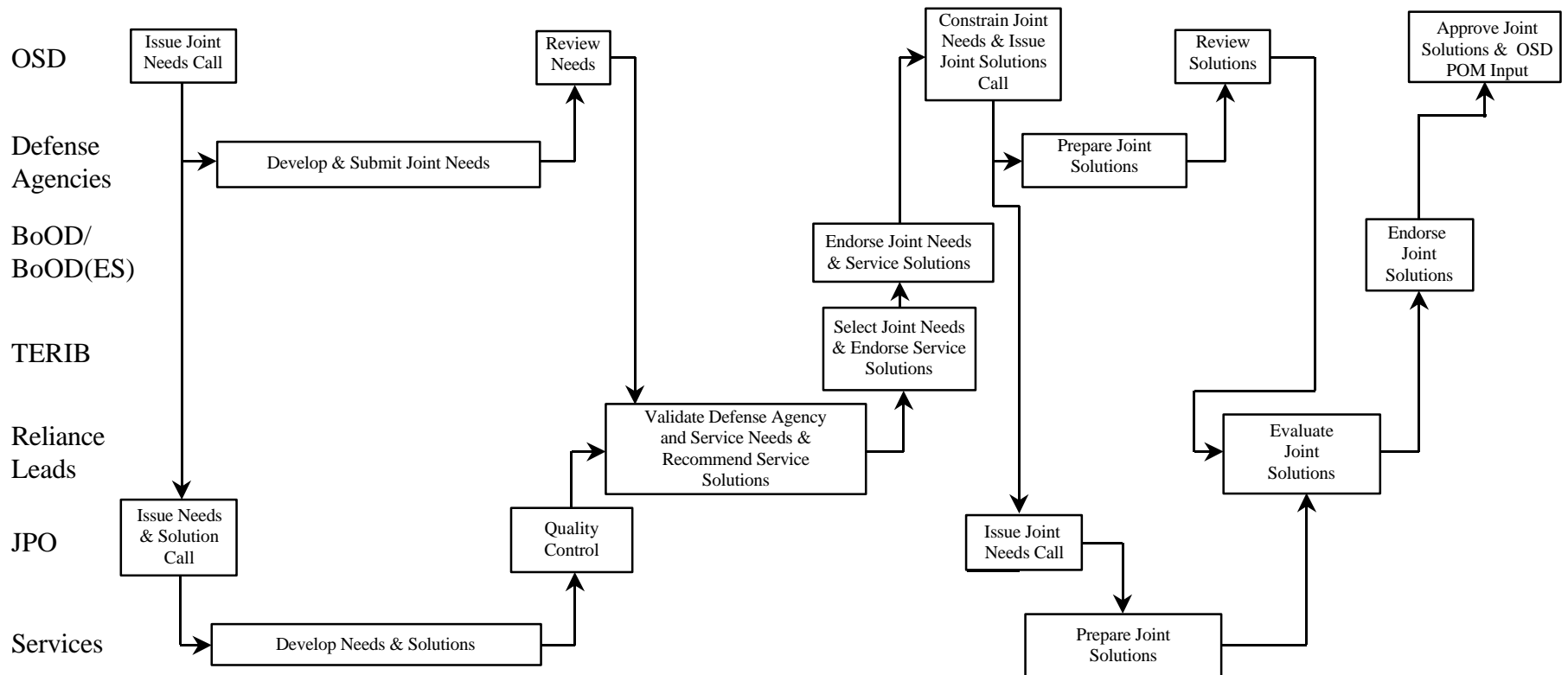


Figure 2-1

Solutions investment process provides the CTEIP investment process with joint investment projects proposed for the future. Figure 2-1 on the preceding page is a flow chart portraying the major activities of the T&E investment planning process. It is important to note that the Services develop both Needs and Solution on a yearly basis, while the CTEIP's process is biennial. This means that joint Needs are considered in one year and the Solutions to those Needs are developed in the following year. The process begins with a Needs call from OSD to the T&E EA and to the Defense Agencies requesting test requirements. This ensures that the entire DoD community has the opportunity to submit their test investment requirements and that applicable OSD guidance is considered. The Board of Operating Directors (BoOD), representing the T&E EA, forwards the call to the Services. The Services submit their candidate test investment Needs with an accompanying Solution to the T&E EA, while the Defense Agencies submit only their candidate investment Needs to OSD. OSD then forwards the Defense Agency Needs to the T&E EA, where they are considered with the Service Needs, as outlined in paragraph 2.1.1 and figure 2-1 below. Those Service Needs and Solutions that are deemed Service-unique remain with the T&E EA. Service Needs (without their accompanying Solution) that show a possibility for joint application are separated and considered with the Defense Agency Needs for deconfliction, elimination of duplication, and possible consolidation. The T&E EA then forwards a set of proposed joint Needs to OSD for consideration and approval as validated joint Needs by the Defense Test and Training Steering Group (DTTSG). As part of this process, the DTTSG will develop and issue constraints to the Needs, which are to be followed in the development of Solutions. The Joint Needs process starts in June and there is approximately a year in which to complete the cycle.

The next phase of the process for Joint investments is the Solution cycle, which begins upon completion of the Needs cycle with a call from OSD to the Services and Defense Agencies to submit their proposed CTEIP Solutions to the approved and constrained Joint Needs. Following the same procedure as that used for Needs, the T&E EA reviews the proposed Service and Defense Agency Solutions, addressing issues such as unwarranted duplication, consolidation, workload, and other factors that may impact the implementation of the proposed Solutions. The T&E EA forwards proposed CTEIP Solutions to OSD for approval by the DTTSG and incorporation into the subsequent POM as CTEIP projects. The timing for the Solution cycle is constrained in that it must be completed in time to allow insertion of the results into the POM preparation.

2.1.1 Integrated Test Investment and PPBS Process

The following is the schedule for a joint T&E investment project starting with the T&E planning process leading to the appropriation in a fiscal year 3 years later. As stated above, the schedule is driven by the Congressional, PPBS, and T&E investment planning procedures.

COMPLETION DATE		ACTIVITY
Month	Fiscal Year	
Jun	XX-4	FYXX OSD issues Needs Call
Jun	XX-4	FYXX T&E EA issues Needs and Solutions Call
July-Dec	XX-3	FYXX Service and Defense Agency Joint Needs submitted
Jan-Apr	XX-3	Needs evaluated by Reliance

Apr-May	XX-3	T&E EA reviews and endorses candidate CTEIP Needs
Jun	XX-3	DTTSG approves and constrains Needs
July	XX-3	FYXX OSD CTEIP Solution Call
July-Sept	XX-3	Joint Solutions prepared and submitted in CTEIP proposal format
Oct-Nov	XX-2	Joint Solutions evaluated by Reliance
Nov-Jan	XX-2	T&E EA reviews and recommends CTEIP investments
Jan	XX-2	Defense Planning Guidance (DPG) issued
Jan	XX-2	DTTSG Approves Solutions
Feb-May	XX-2	POM preparation for FYXX-FYXX+5
May-Sept	XX-2	Issue cycle
Sept	XX-2	Program Decision Memorandum (PDM)
Sept	XX-2	FYXX Budget Estimate Submission (BES)
Oct-Dec	XX-1	OSD/Office of Management and Budget (OMB) Program Budget Decision (PBD) Cycle
Dec	XX-1	Secretary of Defense (SECDEF) Major Budget Issues
Jan-Feb	XX-1	FYXX President's Budget (PB) submitted to Congress
Mar-Sept	XX-1	Congressional enactment of FYXX Defense Appropriations
May-June	XX-1	Submit CTEIP Updated Proposals for FYXX New Start Projects
Aug-Sept	XX-1	OSD Prepare and Issue Test Package Directives (TPDs) for FYXX
Oct	XX	FYXX funding released
Oct-Nov	XX	Project Management Plans (PMPs) Submitted

2.2 CTEIP Project Proposals

This section addresses the preparation and submission of Solutions for JIM projects to be funded under the CTEIP Program. Joint Solutions, submitted in response to approved Needs, are to be written by a designated Service or Defense Agency field activity in the form of a CTEIP proposal.

2.2.1 Proposal Structure and Contents

The CTEIP Project Proposal should demonstrate that it is providing benefits to the T&E community by providing a needed capability in an efficient and effective manner. The Solution must be written to demonstrate that it satisfies the validated joint Need, and a logical approach must be presented to develop a T&E capability in response to the stated Need. While it is not required that the document contain specific information as detailed as that required in a Project Management Plan (PMP), it must contain enough information (or best estimate) to make the project credible, from both a technical and an economic standpoint. It must also convey that all known competing efforts have been considered and evaluated. The initial proposal, generated in response to the Solution cycle, should not exceed five pages, but may contain attachments if they are relevant and necessary to allow a complete assessment of the project. The proposal prepared as part of the Solution cycle will not be able to contain the detail that will be available prior to project execution, but the Solution proposal should be as complete as possible in cost, schedule,

and technical approach.

The format for the JIM Project Proposal is provided in Appendix B of this document.

2.2.2 Evaluation of Solutions

Joint Solutions are submitted in the form of a proposal by the Services and Defense Agencies. The proposals are reviewed, evaluated, approved within the Service, the Defense Agencies, and the T&E EA. As outlined in Section 2.1 above, the T&E EA will also receive Defense Agency Solutions for deconfliction or possible consolidation with Service Solutions. The Solutions, when received by OSD, are then presented to and approved in turn by the Test and Evaluation Resource Committee (TERC) and the DTTSG.

The evaluation criteria used at this level of review are generally a reflection of the CTEIP objectives included in Section 1.2. During any given year, other guidance or emphasis may be applied to address current issues, policies, budget constraints, and concerns that influence the CTEIP or its projects. Generally, the criteria are established based on the following considerations:

- a. Need. Is the Need a validated requirement? Is the Need generic or driven by a specific program? Can the Need be satisfied by other existing or planned capabilities?
- b. Jointness. Does the proposed capability have multi-Service or joint application? This is a key consideration given the basic charter of the program. Related to this criterion is that of customer base. Are there sufficient potential users of the proposed capability to justify the expense of its development?
- c. Interoperability/Commonality/Standardization. Does the project fit within the established standards to be interoperable with other DoD T&E facilities? Does it support commonality? If warranted, can the design be easily replicated at other T&E facilities?
- d. Transportability. If necessary, can the capability be moved easily to another location?
- e. Cost. Is the Solution the best technical alternative for the cost?
- f. Risk. What is the apparent risk given the technological approach and the schedule required to meet the stated Need? Has the proposal considered and assessed the risk?
- g. Cost as an Independent Variable. In the proposal evaluation process for selection of CTEIP projects, cost must be considered as a co-equal with technical performance and schedule.
- h. Other. While schedule is not generally a selection criterion, it can be evaluated relative to the stated need date and the proposed funding profile for implementing the project. The potential for the sustainment of the capability by a single agency after development is also considered.

2.2.3 Approval of CTEIP Projects

As stated above, those Solutions that are approved by the DTTSG are then considered to be approved CTEIP projects. These projects will fall into one of two categories:

- a. Approved for accelerated funding. These are projects that meet high-priority needs in the near term. Funding for these would require restructuring programmed CTEIP funding and therefore, few new projects likely to fall under this ranking.
- b. Approved for inclusion in the POM. The number of projects in this ranking and the year they will be proposed as a new start depend on the POM guidance and available funding.

2.2.4 Proposal Update

In April/June of the fiscal year prior to the initial funding of an approved CTEIP project, the Project Director will update the proposal and submit it to the CTEIP Program Element Manager (PEM). It is expected that, by this time, planning for the project will have progressed such that more detailed information will be available, and all the information required by Appendix B can be included in the proposal submission.

2.2.5 Disapproved Solutions.

With the exception of Defense Agency Solutions at the T&E EA level, Solutions may be disapproved at any level of review. Solutions may be disapproved on the basis of inadequate documentation or insufficient justification. They may also be disapproved for failing to meet CTEIP criteria or for inconsistency with CTEIP objectives. Whatever the reason for their disapproval, all disapproved Solutions must be resubmitted in a subsequent Needs and Solutions cycle if the sponsoring agency wishes them to be reconsidered.

2.3 Out-of-Cycle Proposals

In rare instances, there may be a need to propose a CTEIP project outside of the normal planning process. The T&E EA will evaluate the technical requirements of such proposals and make a recommendation to OSD regarding the priority of the effort relative to ongoing and planned projects.

3.0 CTEIP PROJECT EXECUTION

This section provides guidelines in the execution of JIM CTEIP projects from project initiation through transition to custodian organizations.

3.1 Project Initiation and Management

CTEIP projects identified as JIM are initiated by the issuance of a Test Package Directive (TPD),

which is prepared by the CTEIP PEM after funding has been approved by the DTTSG. The TPD is sent to the Service or Defense Agency TERC member with guidance for preparing a Project Management Plan (PMP). The TPD provides a project description and technical information, project performance, schedule requirements, cost information, and special applicable instructions. The PMP prepared in response to the TPD depicts these elements of the project. The TPD, together with the approved PMP, constitute a contract between the CTEIP PEM, the lead Service or Defense Agency, and the Project Director on how the project will be executed. These documents are described in sections 3.3.1 and 3.3.2 below.

Through the TPD, the CTEIP PEM confirms the executing Service or Defense Agency. CTEIP projects are then executed by organizations within the Services and Defense Agencies with the required technical expertise, management structure, facilities, and support elements. The TERC and CTEIP PEM provide overall management oversight. The day-to-day management of the project is left to the individual Project Director (PD).

Generally, CTEIP JIM projects are implemented in two phases:

- a. Phase I, consisting of efforts associated with concept development and are required to define the system technical performance requirements and risk reduction. Phase I will generally be one to two years in duration.
- b. Phase II, consisting of efforts associated with Engineering and Manufacturing Development (EMD) including transition to the custodian organization. Phase II is normally three years in duration.

Transition from Phase I to Phase II is governed by completion of concept development and the completion and approval of Phase I documentation, which are described in section 3.2.3 below.

3.2 Project Documentation

To monitor progress and provide timely management direction, CTEIP depends on several documents and activities. These are described in the following sections.

3.2.1 Test Package Directive

The TPD is the document that transmits specific direction for the execution of the project to the responsible agent. TPDs are prepared annually and are signed by the CTEIP PEM for all JIM projects and provide direction on performance, schedule, and cost from which the PD prepares the PMP. TPDs contain six sections that address the following:

- a. The description of the project based on the need for the project, the proposed T&E capability, and the key technical characteristics.
- b. The management direction to be followed in preparing the PMP and in implementing the project.
- c. A list of key milestones for scheduling the activities of the project.

- d. A funding profile to be used for planning purposes only, which includes the budget year and requirements through completion.
- e. Special instructions, which are exceptions and expansions to the standing project instructions that are contained in Appendix C.
- f. A statement of understanding.

The format of the TPD is provided in Appendix C of this document.

3.2.2 Project Management Plan

A PMP is required for all JIM projects and is submitted annually by the PD in response to the TPD from the CTEIP PEM. The PMP represents the PD's management approach in executing the project. Upon its approval, the PMP, together with the TPD, constitute a contract between the CTEIP PEM, the lead Service or Defense Agency, and the Project Director by which the project will be executed. Implicit in this contract is the PD's readiness to execute the project as described in the TPD and the CTEIP PEM's readiness to provide funding and accept the PD's acquisition approach. The requirements statement, technical goals/capabilities, schedule, and funding, as stated in the PMP, must be consistent Phase I documentation. Since the management of the project is guided by the PMP, each annual PMP must reflect any changes from that of the previous year. Subsequent project performance will be measured against this baseline, therefore, the management of the project must be guided by the PMP.

The PMP must be consistent with the guidance contained in the TPD. In particular, it must reflect project execution using the funding profile in the TPD. If funding deficiencies exist, the PMP must address these in terms of how performance and schedule will be affected.

The following items are the major parts of the PMP:

- a. Project Description, which includes the mission need, the T&E capability and how it was defined, and key technical performance characteristics.
- b. Critical/Key Issues, which describes issues that can affect the project and how they are proposed to be resolved.
- c. Management Approach, which describes the project organization, technical management, business strategy, cost controls, activation, risk management, assessment, and transition.
- d. Funding, which identifies the required CTEIP funding, other funding, and estimates of life-cycle funding after transition.
- e. Schedule, which identifies major milestones including CTEIP documentation preparation and submittal timeline.
- f. Statement of Understanding.

As stated above, the PMP is updated annually in response to the TPD and is submitted to the CTEIP PEM for review. If applicable, the CTEIP PEM's recommendations and comments are then returned to the PD through the appropriate TERC member for incorporation into a revised

PMP, which is then resubmitted for the CTEIP PEM's approval.

The format and contents of the PMP are provided in Appendix D of this document.

3.2.3 Phase I Documentation

There are four required CTEIP documents that must be provided to the CTEIP PEM in order for a CTEIP project to transition to Phase II EMD. These are:

- a. Test Capability Requirements Document (TCRD)
- b. Test Capability Benefits Analysis (TCBA)
- c. Life Cycle Support Plan (LCSP) with supporting any Memoranda of Understanding (MOU) required
- d. Project Baseline

These documents should be produced and approved within the first half of Phase I. The approval authority for these documents are identified in the chart below:

Document	Approval Authority
TCRD	BoOD/BoD(ES)*
TCBA	OSD
LCSP	BoOD/BoD(ES)
Project Baseline	OSD

*Board of Directors (Executive Secretariat)

Document formats and instructions are provided in Appendices E through H. Documentation will be tailored to each project to minimize the preparation of unnecessary documentation while meeting reporting requirements. For instance, CTEIP projects residing at a single location do not need a MOU addressing multi-Service cost sharing. However, a LCSP is needed to identify the Service that will provide logistic support in the outyears.

While each CTEIP project is unique, the following guidelines should be followed:

- a. All documentation should be submitted to the Joint Program Office (T&E) for entrance into the review and approval process. Copies of the TCBA and Project Baseline should simultaneously submitted to the CTEIP PEM.
- b. In most cases, the TCRD is completed before any of the other documents are sent forward to the TERIB/BoOD for review, endorsement, or approval. Other documents may be initiated, but must be revised to reflect any changes made to the TCRD before those documents are submitted for TERIB/BoOD review or approval.
- c. All documents must be completed, approved, and received by OSD before funding for Phase II contract award can be provided. The Request for Proposal (RFP) may be initiated while documents are being developed/staffed, however, any changes to the program in terms of performance, schedule, or lifecycle costs must be reflected in the RFP.

- d. In most cases, the TCRD, TCBA, and LCSP will be completed and approved during the first half of Phase I. Adequate timing for staffing the documentation through the T&E EA and OSD during this time frame must be planned when developing the CTEIP milestone schedule. The complexity of the CTEIP project will directly impact the amount of staffing time required through the T&E EA.

3.2.3.1 Test Capability Requirements Document

The TCRD is the document that validates the capabilities to be developed by the project in terms of the stated test need, the known systems requirements, and the required initial/final operational capability. The TCRD is prepared during the first half of Phase I and signed by the pertinent user organizations and the BoOD. Major modifications to the requirements of a project must be documented in a supplement to the TCRD and approved by the BoOD/BoD(ES). Since approval of the TCRD is part of the exit criteria from Phase I, it will be identified as a major milestone in the project's master schedule.

The TCRD format is provided in Appendix E of this document.

3.2.3.2 Test Capability Benefit Analysis

A TCBA is conducted to determine the best course of action to meet the T&E need. By assessing various realistic alternatives, it supports a particular technical approach considering cost and schedule. In the TCBA, cost should be considered to be an independent variable. By considering cost in a similar manner as a technical requirement, trades can be made in the overall concept and solution sets in order to achieve a sufficient test capability within a practical cost. In the TCBA, a comparison of the trade offs in technical, schedule, and cost requirements must be shown. Important in these comparisons will be the identification of the level above the minimum essential requirements where significant additional costs are required to achieve relatively small gains in performance and/or schedule. The TCBA is conducted during the first half of Phase I after more definition and risks are known. Since approval of the TCBA is part of the exit criteria from Phase I, it will be identified as a major milestone in the project's master schedule.

The TCBA format and contents are provided in Appendix F of this document.

3.2.3.3 Life Cycle Support Plan

The LCSP assesses the project support cost and insures its supportability by identifying support requirements, estimating costs, assigning organizational responsibilities for each support element throughout the established life cycle of the project, and establishing concepts and procedures for continuing support. The LCSP is prepared initially during the first half of Phase I and updated, as required by the T&E EA during Phase II as more details are established for the project. Since approval of the initial LCSP is part of the exit criteria from Phase I, it will be identified as a major milestone in the project's master schedule.

The format for the LCSP is provided in Appendix G of this document.

3.2.3.4 Project Baseline

The Project Baseline constitutes the final project definition baseline in terms of technical performance, cost, and schedule. It is based on the project objectives and thresholds established as a result of technical studies and other analyses conducted during Phase I. Upon agreement by the CTEIP PEM and the PD, the Project Baseline becomes the document used to measure project performance for Phase I and Phase II efforts. The Project Baseline includes the exit criteria for each phase. Changes to the Project Baseline can only be made with the agreement of the CTEIP PEM and the PD. Since approval of the Project Baseline is part of the exit criteria from Phase I, it will be identified as a major milestone in the project's master schedule.

The format for the Project Baseline is provided in Appendix H of this document.

3.2.4 Monthly Status Reports

The successful management of the program depends on timely feedback from the project offices implementing the CTEIP projects. Monthly project status reports provide information to the CTEIP PEM regarding the technical and financial status of each project. Of importance is the tracking of obligations and expenditures of funds to ensure that established comptroller guidelines are met. The reports are due 20 calendar days after the month being reported or on the next business day after the 20th calendar day when the 20th day falls on a weekend or holiday. The reports should be provided both by fax and electronically.

The format for the Monthly Status Report is provided in Appendix I of this document.

3.2.5 Project Final Report

In the final year of a project's funding, the PD will prepare a final report for the project. The report will provide a history of the project's execution from its proposal to its transition to operational status. Major milestones in the development of the project, as well and lessons learned will be discussed.

The format for the Project Final Report is provided in Appendix J of this document.

3.3 CTEIP Reviews

3.3.1 TERIB/BoOD Annual CTEIP Project Review

Because of the long lead times between CTEIP project inception and execution and unforeseen changes in priorities and technical risk, the CTEIP PEM requests that the BoOD provide an

annual recommendation on the relative priorities of the CTEIP projects in Phase I or programmed for initiation as Phase I projects during the next two years. The TERC or Services may also recommend for consideration in the prioritization any approved projects programmed for funding in the outyears that may merit acceleration of funding to the coming fiscal year. The prioritization occurs in time each year to provide an input to the CTEIP Mid-Year Review. The BoOD provides the TERC a prioritized “1-N” list of CTEIP projects that is based on a revalidation of the Need; the criticality of the test capability (impact if not funded, urgency to support planned test programs); and a review of the proposed Solution’s affordability, technical feasibility, and program risks. The BoOD annual review is scheduled to take place every March prior to the OSD CTEIP Annual Review. Formats to be used for this review will be issued with the announcement of the review by the T&E EA.

3.3.2 CTEIP Annual Program Review

In April of each year, the CTEIP PEM conducts a review of the total CTEIP. The review, known as the CTEIP Mid-Year Review, consists of briefings by the PDs on the progress and status of each ongoing project as well as prospective new starts. The CTEIP PEM and the TERC use this information to provide program direction or to make mid-year financial adjustments to the program. The review also provides an opportunity for the entire CTEIP community to interface directly with the PDs and to identify or clarify issues or concerns. All CTEIP PDs are expected to attend the full review.

Appendix K provides more specific submission requirements for the review, along with a sample viewgraph format for the briefing. All presentation materials should be forwarded to the CTEIP PEM in electronic media prior to the review and hard copies of the presentation are to be available for distribution to the attendees.

3.3.3 Project Management Reviews

Project Management Reviews (PMRs) are conducted periodically by the CTEIP PEM, as needed, to provide the current status of projects or to examine specific project issues and concerns.

The content and format of the PMR package is provided in Appendix L of this document.

3.3.4 Monthly CTEIP Meetings

The TERC and its support staff meet monthly to plan activities, review program issues, and review the financial status of the program. The forum is available to conduct PMRs or address any other matter required by any of the members of the TERC. Project financial execution and critical issues noted in the monthly project status reports will be briefed and discussed at these monthly meetings.

3.3.5 On-Site Project Visits/Reviews

When deemed appropriate by the CTEIP PEM, reviews are conducted at the site(s) where the projects are being developed or implemented. The reviews will be scheduled through the Service or Defense Agency TERC Member and may be conducted by a team consisting of OSD, Service and Defense Agency representatives, and other subject matter experts.

3.4 Financial Management

3.4.1 Allocation of Funds

Funds are distributed as early in the fiscal year as possible. The goal is to provide total project funding in the first disbursement of the fiscal year's funds, unless specific justification dictates a different amount. Remaining funds are allocated following the annual Mid-Year Review. The funds of projects with lagging obligation and/or expenditure rates or other difficulties are subject to reallocation.

3.4.2 Obligation and Expenditure of Funds

Obligation and expenditure authority are tools used by comptrollers to evaluate budget execution. Current OSD Comptroller guidance is that funds will be 100% obligated and 70% expended during the first fiscal year and 95% expended by the following year. The tracking of obligations and expenditures provides a measure of how well CTEIP is fiscally executed and whether CTEIP funding can be reallocated. Optimum use of these funds requires that an obligation and expenditure forecast be prepared and kept updated. The PMP requires the forecast to cover 2 years. In addition, the CTEIP PEM requires monthly reports that track the actual field obligations and expenditures as compared to this forecast. There is a serious lag in the currency of financial data reported by the Defense Finance and Accounting Service (DFAS). Therefore, active management of the CTEIP and justification and defense of its budget demand that the field data submitted in the Monthly Reports reflect the most current status of obligations and expenditures.

3.4.3 Extension of Funds

CTEIP funds are to be fully obligated by September of each year. When program deviations require that these funds be available past this date, an extension will be requested. The PD, through the Service or Defense Agency TERC Member, may request an extension from the CTEIP PEM for a period not to exceed 3 months with a justification and an estimated obligation/expenditure date. It is emphasized that although CTEIP funds are Research, Development, Test and Evaluation (RDT&E) funds and have an expiration time of 2 years, these funds are to be obligated during the fiscal year they were appropriated. Failure to do so often results in loss of funds due to reprogramming actions.

3.5 Test and Evaluation Community Web (TECWEB)/TERC Private Repository

The TERC Private Repository is an electronic server hosted on the TECWEB, which is itself an intranet of the Test and Evaluation Community Network (TECNET). The purpose of the TERC

Private Repository is to facilitate communication on CTEIP matters between OSD, the program's principals, and the Services and Defense Agencies. Posted in the Repository are such CTEIP documentation as TERC meeting read aheads and minutes, Test Package Directives, project briefs, and the CTEIP Planning and Execution Guide. Two things are required to access the TERC Private Repository from the TECWEB: (1) a TECWEB account and (2) permission to access the TERC Private Repository.

To request a TECWEB account, send an e-mail to tecadmin@tecnet1.jcte.jcs.mil, or contact the TECNET administrators at 301-342-7501. Contractor applicants must have a government sponsor with an active TECWEB account.

TECNET administrators grant access to the TERC Private Repository to registered TERCWEB account holders at the request of the TERC Working Group (WG) Chair. Access may be requested from the incumbent TERC WG chair via e-mail with provision of the following information:

- Name
- TECNET user name
- Organization/Company (If contractor)
- Address
- Telephone number(s)
- Relation to CTEIP
- Name and telephone number of government sponsor with an active TECWEB account (If contractor)

For more information about TECNET and TECWEB, access the TECNET homepage on the World Wide Web at <http://tecnet0.jcte.jcs.mil:9000>.

The TERC Private Repository may alternatively be accessed through a File Transfer Protocol (FTP) utility. The site is located at Host Name: 140.229.33.200; User ID: TERC; Password: mrtfb97. It should be noted that the User ID and Password are case-sensitive.

APPENDIX A

COMPOSITION OF ORGANIZATIONS RELATED TO CTEIP

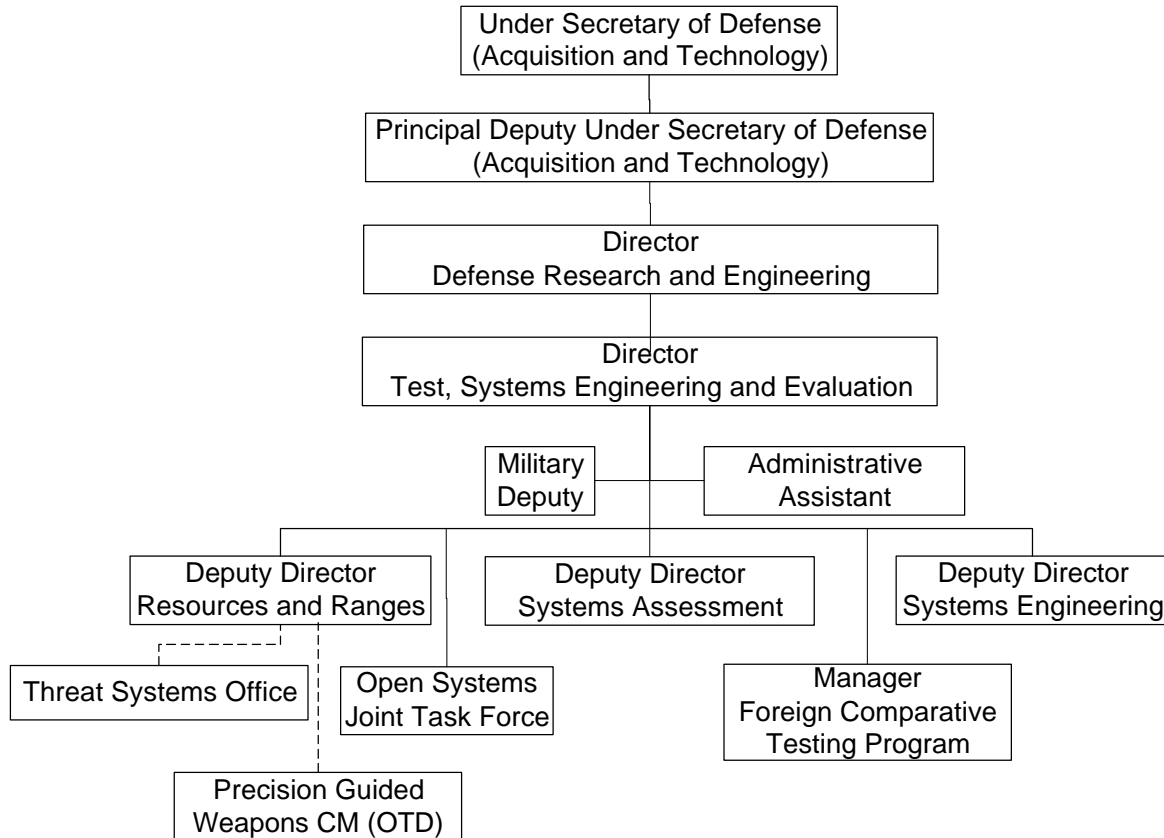
1. Office of the Director, Test, Systems Engineering & Evaluation (DTSE&E)

Reporting through the Director, Defense Research and Engineering to the Principal Deputy Under Secretary of Defense for Acquisition and Technology (PDUSD(A&T)), the Office of the Director, Test, Systems Engineering & Evaluation (DTSE&E) is responsible for ensuring the effective integration of all engineering disciplines into the system acquisition process. The Office maintains oversight over the Department of Defense's Major Range and Test Facility Base (MRTFB) and the development of test resources such as instrumentation, targets and other threat simulators, and models and simulations infrastructure. DTSE&E also exercises direct management and oversight of the CTEIP Program Element 0604940D.

Other duties and responsibilities of DTSE&E are to:

- a. Provide Developmental Test and Systems Engineering assessments to the Defense Acquisition Board.
- b. Review and approve Test and Evaluation Master Plans (TEMPs).
- c. Chair the Joint Test and Evaluation Senior Advisory Committee.
- d. Manage Foreign Comparative Testing (FCT) Program.
- e. Manage and administer the Director, Test and Evaluation, Defense Appropriation.
- f. Establish Developmental Test, Systems Engineering and Evaluation policy.
- g. Chair the Defense Test and Training Steering Group.

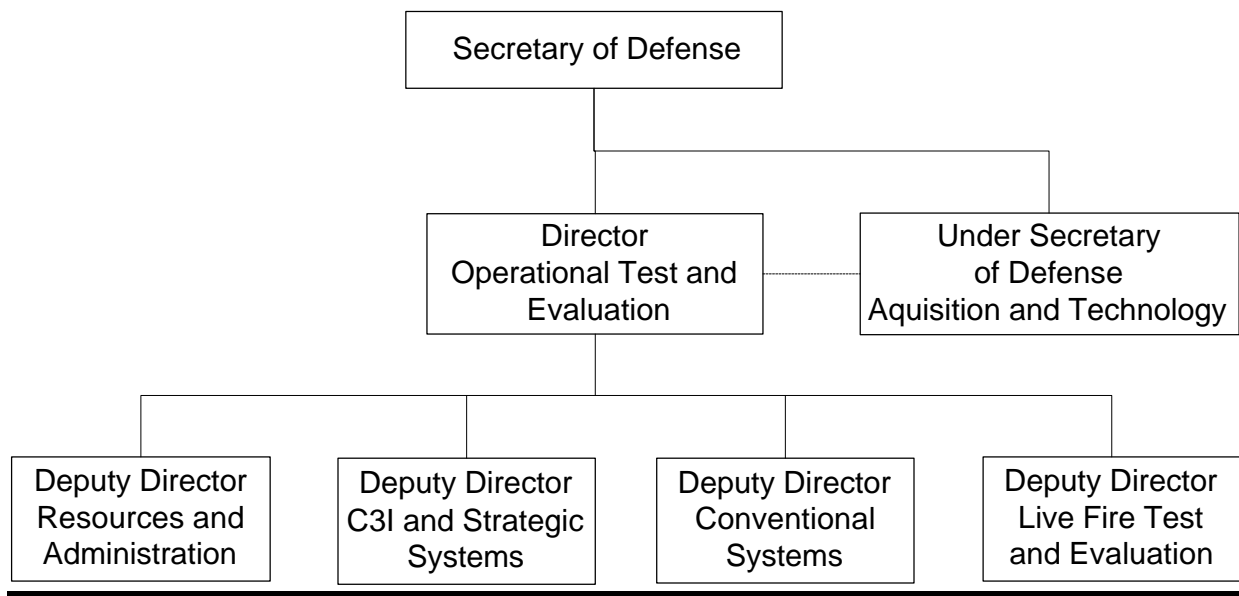
Figure A-1 on the following page is a chart of the DTSE&E organization.



DTSE&E Organizational Chart
Figure A-1

2. Director, Operation Test and Evaluation

The Director, Operational Test & Evaluation (DOT&E) is the principal staff assistant and senior advisor to the Secretary of Defense on Operational Test and Evaluation (OT&E) and Live Fire Test and Evaluation (LFT&E) in the Department of Defense. DOT&E is responsible for issuing DoD OT&E and LFT&E policy and procedures; reviewing and analyzing the results of OT&E and LFT&E conducted for each major DoD acquisition program; and providing independent assessments to the Secretary of Defense, the Under Secretary of Defense for Acquisition and Technology (USD(A&T)), and Congress. The Director's office is also responsible for making budgetary and financial recommendations regarding OT&E and ensuring OT&E and LFT&E for major DoD Acquisition programs are adequate to confirm the operational effectiveness, suitability, vulnerability, and lethality of defense systems in combat use. The Director's office oversees the Resource Enhancement Project (REP) category of CTEIP Program Element funding. The Director charts the Operational Test and Evaluation Coordinating Committee, chaired by the Deputy for Resources and Administration, with responsibility for overseeing REP subproject selection and subsequent technical and financial execution.



**DOT&E Organizational Chart
Figure A-2**

3. Defense Test and Training Steering Group (DTTSG)

The mission of the DTTSG is to oversee the development of requirements and integration of all training and test range instrumentation and to facilitate the development of a consolidated acquisition policy for training and test capabilities, including embedded test and training capabilities in weapons systems. The DTTSG is specifically chartered with formulating Department of Defense corporate planning for Defense training and test investment resources for DTSE&E consideration and PDUSD(A&T) approval, and as such, approves recommended new CTEIP projects. The DTTSG is also chartered to provide direction, policy, guidance, and program approval for all Department of Defense development and acquisition programs for hardware simulators, emitters, software simulations, hybrid representations, and surrogates of threat weapon systems. Chaired by DTSE&E, the Steering Group is made up of membership provided from the following offices:

- a. Assistant Secretary of Defense (Command, Control, Communications and Intelligence)
- b. Director, Defense Research and Engineering
- c. Principal Deputy Under Secretary of Defense (Acquisition & Technology) (Strategic and Tactical Systems)
- d. Deputy Under Secretary of Defense (Readiness)
- e. Deputy Director, Operational Test and Evaluation (Resources and Administration)
- f. Test and Evaluation Representatives from the Army, Navy, Air Force, and Marine Corps

- g. Training Representatives from the Army, Navy, Air Force, and Marine Corps
- h. Director, Joint Staff
- i. Defense Special Weapons Agency
- j. Ballistic Missile Defense Organization
- k. Defense Intelligence Agency

4. Test and Evaluation Resources Committee (TERC)

The TERC is one of three permanently chartered committees established under the DTTSG; the other two are discussed below. The TERC assists in overseeing the development of infrastructure requirements for the T&E community and assisting in the development of infrastructure objectives as established in such instruments as the Joint Test and Training Range Roadmap (JTTRR). The TERC discharges its duties primarily through the direct oversight and management of the CTEIP.

In order to produce a biannual set of deconflicted and validated list of Solutions for consideration by the DTTSG as potential CTEIP projects, the TERC maintains a close relationship with the T&E EA Board of Operating Directors (BoOD) and Board of Directors (BoD). The DTTSG Executive Secretary appoints the Co-chairs of the TERC are, with one representative from the office of DTSE&E and one representative from the office of DOT&E. Presently the co-chairs are The Deputy Director, Resources and Ranges from DTSE&E and Deputy Director, Resources and Administration from DOT&E. The CTEIP Program Element Manager serves as the Executive Secretary of the TERC. Voting members of the TERC consist of representatives (O-6/GM-15 level or above) from the following offices:

- a. Assistant Director, Test and Evaluation Resources, Ballistic Missile Defense Office
- b. Chief, Resources Division, Test and Evaluation Management Agency, U.S. Army
- c. Directory of Test and Evaluation and Technology Requirements, T&E Infrastructure, U.S. Navy
- d. Chief, Resources Division, Test and Evaluation Directorate, U.S. Air Force
- e. Division Chief, Washington Operations, Defense Information Systems Agency/Joint Interoperability Test Command
- f. Information Systems Office, Battlefield Awareness Office, Advanced Research Projects Agency
- g. Director for Special Weapon Technology, Testing Division, Defense Threat Reduction Agency
- h. Director for Force Structure, Resources and Assessment (J-8), Joint Chiefs of Staff
- i. Executive Secretariat, Training Instrumentation Resource Investment Committee (TIRIC).

Technical representatives of the BoD and BoOD (currently the Director, JPO(T&E) and a Chairperson of the TERIB) and the CROSSBOW Executive Secretary serve as standing advisors to the TERC.

5. Training Instrumentation Resource Investment Committee (TIRIC)

Another of the three permanently chartered committees established under the DTTSG, the TIRIC

was established to maintain oversight of the development of instrumentation requirements and policies for DoD training ranges. It is also chartered with fostering common development and interoperability with instrumentation systems used by the test and training communities. The chair of the TIRIC is an executive appointed by the DTTSG Executive Secretary, and the Executive Secretary of the TIRIC is the staff specialist for training instrumentation in the Office of the Deputy Under Secretary of Defense (Readiness). The TIRIC consists of members from the following offices:

- a. Deputy Under Secretary of Defense (Advanced Technology), Assistant Deputy Under Secretary of Defense (Advanced Development)
- b. Chief, Training Simulations Division in the Office of the Deputy Chief of Staff, Operations and Plans, U.S. Army
- c. Head, Tactical Training Ranges Section in the Office of the Deputy Chief of Naval Operations (Resources, Warfare Requirements and Assessments), Air Warfare Division, U.S. Navy
- d. Chief, Ranges and Airspace Division in the Office of the Directorate of Operations, Deputy Chief of Staff, Plans and Operations, U.S. Air Force
- e. Head, Training and Education Support Branch, T&E Division in the Marine Corps Combat Development Command, U.S. Marine Corps
- f. Chief, Requirements and Acquisition Division in the Office of the Force Structure, Resources, and Assessment (J-8), Joint Chiefs of Staff
- g. Staff Assistant for Resources in the Office of the Deputy Director, Operational Test and Evaluation (Resources and Administration)
- h. Director, Modeling and Simulation Office for the Director, Research and Engineering
- i. Chief, Technology Division, Joint Warfighting Center
- j. TERC Executive Secretary
- k. CROSSBOW Executive Secretary.

6. CROSSBOW Committee (CROSSBOW)

The CROSSBOW Committee is established in the DTTSG Charter to coordinate the working level activities necessary to support the threat simulator responsibilities of the DTTSG. The Committee's mission is to provide technical and management oversight of the Services' development and acquisition programs for threat and threat related hardware simulators, emitters, software simulations, hybrid representations, and surrogates. In addition to its oversight responsibilities, the CROSSBOW Committee also provides a forum for the exchange of the threat asset requirements of the test and training communities and for the exchange and integration of intelligence information. DTSE&E appoints the CROSSBOW Chair with the advice and consent of the Director, Defense Intelligence Agency/Missile and Space Intelligence Center. Membership includes one representative and one alternate from the following:

- a. Department of the Army
- b. Department of the Navy
- c. Department of the Air Force

- d. Defense Intelligence Agency

Observers include one representative each from the following offices:

- a. Under Secretary of Defense (Acquisition and Technology), Deputy Director, Test, Systems Engineering and Evaluation
- b. Director, Operational Test and Evaluation
- c. National Security Agency
- d. Central Intelligence Agency
- e. Joint Staff
- f. Ballistic Missile Defense Organization
- g. Joint Targets Oversight Council
- h. T&E Executive Agent, Board of Operating Directors
- i. Electronic Warfare Test Resource Office
- j. Service Scientific and Technical Intelligence (S&TI) Centers as required to serve as liaison between the CROSSBOW Committee and the S&TI agencies.

6. T&E Executive Agent Organization

The Service Test and Evaluation Executive Agent was established in 1993 in response to the *1993 Roles and Mission Report of the Armed Forces of the United States*. The mission of the organization is to provide oversight of all Services' RDT&E budgets for Service investments in test capabilities and for streamlining the Services' T&E infrastructure. The Under Secretary of Defense (Acquisition & Technology) (USD(A&T)) provides overall DoD policy guidance and oversight of the T&E Executive Agent. The T&E Executive Agent is organized as follows:

- a. The Board of Directors (BoD). The BoD consists of the Service Vice Chiefs of Staff with the Assistant Commandant, United States Marine Corps, serving as an advisory member. When appropriate, the BoD may include representation from the Joint Staff. In addition, the BoD may establish liaisons and coordinate plans, as deemed necessary, with the Joint Chiefs of Staff, Defense Agencies, OSD, and other cognizant activities. Principal responsibilities of the BoD are to approve the Services' T&E infrastructure requirements and commit Services' T&E resources to meet these requirements; approve and promulgate Services' T&E investment and infrastructure policy and guidance; and provide program review and advocacy of the Service T&E infrastructure to OSD and Congress.
- b. The Board of Operating Directors (BoOD). The BoOD consists of the Service intermediate headquarters flag officer T&E managers. Currently, these officers are the Commander, U.S. Army Test and Evaluation Command; Commander, Assistant Commander for T&E, Naval Air Systems Command; and Director of Operations, U.S. Air Force Material Command. The chairman of the BoOD reports directly to the Chairman, BoD. The Chairmanship of the BoOD among the Services, such that a single service does not chair both the BoD and the BoOD simultaneously. The

mission of the BoOD is to manage the T&E Reliance process for infrastructure investment and other tasks that support the T&E vision, strategy, policies, and guidance provided by the T&E Executive Agent BoD.

- c. The Test and Evaluation Reliance and Investment Board (TERIB). The TERIB consists of senior technical experts from the Service T&E community and representatives from the Defense Agencies. The CTEIP PEM serves as an advisor to the TERIB. The TERIB, together with the CTEIP PEM, provides technical expertise and recommendations on T&E investments to satisfy Service and Defense Agency T&E requirements in the following 10 Reliance functional areas:

Air Combat
Land Combat
Sea Combat
Space Combat
Common Range Instrumentation
Electronic Combat
Armaments and Munitions
Targets
Test Environments
Command, Control, Communications, Computers, and Intelligence (C⁴I).

The TERIB provides consolidated and deconflicted test requirements and proposed test investments to the BoOD. They finalize the TRMP and develop the DoD TIS. The TERIB also provides technical recommendations to the BoOD and TERC on T&E investment issues. Three individuals, one from each Service, are appointed by the BoOD to serve as TERIB Lead co-chairs. The co-chair from the same Service as the BoOD Chair will serve as the TERIB Chair and shall report directly to the BoOD Chair. The TERIB Secretariat comprises appointed representatives from each of the Services and provides administrative support to the TERIB Co-Chairs. The Secretariat member who reports to the TERIB Chair assumes the lead for execution of all TERIB Secretariat responsibilities.

- d. The T&E Reliance Structure. Ten Reliance teams, one overseeing each of the ten test areas, are established under provisions contained in joint-Service MOA's. Reliance Leads for each area are designated to serve as the points of contact for the investment area and are responsible for coordinating all Service resource requirements within the investment area, including developing and maintaining Test Capability Master Plans (TCMPs). The Leads report through the TERIB directly to the BoOD for test resource matters and receive technical coordination and guidance from the TERIB.
- e. The Joint Program Office for T&E (JPO(T&E)). The JPO(T&E) coordinates the execution of Service and multi-service T&E investment projects. Specific responsibilities of the JPO(T&E) include (1) facilitating deconfliction and integration

of the various T&E investment products (Services' submissions, CTEIP submissions, DoD TRMP and DoD TIS production) and development of requirements prioritization; (2) assisting the OSD test capability, budget, and investment review process by reviewing and deconflicting the T&E investment portion of the draft Service briefings; (3) managing the T&E Business Process Reengineering initiative; (4) managing the T&E Community Network (TECNET) and (5) conducting special studies, as directed, to include new projects requirements development, on-going project reviews, and developing opportunities for common maintenance facilities. The JPO(T&E) is composed of a senior-level civilian director, a military deputy director, and supporting staff from each of the Services.

6. The Range Commanders Council (RCC)

The RCC represents the T&E and training ranges and is responsible for achieving commonality and standardization in range technical capabilities. The RCC assists the BoOD in identifying T&E range investment and sustainment requirements and providing personnel with the expertise required to address complex technical questions regarding T&E ranges. The RCC ensures involvement of the T&E and training range commanders in the investment review process and coordinate and promulgate technical commonality and interoperability standards for T&E investments.

7. T&E Community

The DoD T&E support is provided by an organization composed of OSD, Service/Defense Agency headquarters, and field organizations that conduct the T&E. While each Service or Defense Agency may be organized differently, there are similarities with respect to how T&E is managed and conducted. Each Service has a headquarters organization that provides and manages the resources required at the field level and provides guidance in conducting T&E activities. The T&E field organization is composed of elements of the MRTFB and other T&E sites considered under Reliance. In addition, each Service and Defense Agency also has an Operational T&E organization to provide policy and resources in operational testing.

APPENDIX B

JIM PROPOSAL FORMAT

This appendix provides the format to be used when submitting a candidate for a CTEIP JIM project. The basic proposal should not exceed five pages but can contain attachments if considered relevant and necessary to allow a complete assessment. It is understood that when a proposal is first written, many of the details contained in this format will not yet be known, and they are not expected to be provided. However, when the proposal is updated in the year prior to the project's initiation, planning is expected to be mature enough for the required information to be available. It is in that iteration of the proposal that such detail will be expected.

COVER PAGE

PROPOSAL TITLE: A concise statement of the proposal that describes the action (e.g., study, development, validation, etc.) and the final capability desired (e.g., advanced telemetry, measurement system, simulation facility, etc.)

PROPOSAL DATE: Submittal date. If the proposal has been previously submitted, indicate the original submittal date.

SUBMITTING ORGANIZATION: Service/field activity, point of contact, address, and telephone numbers.

FUNCTIONAL AREA: Which of the ten Reliance functional areas applies to the proposal.

T&E NEED

Summarize the approved T&E Need(s) to be satisfied by the proposal, to include the programs to be supported and the time frame in which the Need is required.

Provide the impact to DoD testing if need is not satisfied during the determined period. Include any loss of opportunity provided by new technologies.

PROPOSED CAPABILITY

Describe the proposed capability in terms of specific test requirements, such as increase in testing capacity, increased measurement accuracy or data rate, new threats to be simulated, etc. Quantitative characteristics should be provided if known.

Provide major attributes of the proposed capability, particularly as they relate to the objectives of the CTEIP, such as interoperability, transportability, commonality, and standardization.

Include an overall comparison of the proposed capability versus those in existence.

Identify the test field activities and location(s) of the proposed capability.

KNOWN ALTERNATIVES

Provide an initial discussion of known reasonable and feasible alternatives for the proposed project in meeting the stated test need. Include cost estimates, when available, and explain known technical and schedule risks associated with each alternative. The analysis should include a summary with ratings (1 to n) for all alternates considered.

PROPOSED TECHNICAL APPROACH

Provide a description of the proposed design strategy to develop the capability. Depending on the purpose of the proposal, briefly describe a plan leading to the final proposal objective. Provide specific concepts to be used or defined, dependency on other efforts or projects, validations required, and any other action required before final technical decisions are made.

Identify any risk inherent in the approach and assess how it relates to cost and schedule. Identify any action required to mitigate the risk or for contingencies.

Describe the scope/limitations of the proposal in terms of technical and operational considerations and provide rationale (number and location of prototypes, transportability constraints, security procedures, etc.).

Describe the different technical approaches that have been considered during the development of the initial solution proposal. Discuss the efforts made to investigate different approaches and provide a general discussion of the costs and benefits identified.

SCHEDULE

Provide a milestone chart representing the proposed schedule. It is important that this schedule be consistent with the proposal planning schedule and availability of funding. The chart should include the following milestones, as they apply:

Phase I

- Project initiation

- Project organization established (Project Office, IPTs, Committees)

- Requirement definition initiated/completed

- Design approach defined

- Memoranda of Understanding completed

- TCRD initiated/completed

- TCBA initiated/completed

LCSP initiated/completed
Project Baseline initiated/completed
Phase I completed

Phase II

Phase II initiated
System specification initiated/completed
Fabrication/integration/construction initiated/completed
Acceptance testing initiated/completed
Initial operational capability (IOC)
Full operational capability (FOC)

FUNDING REQUIRED

Provide a funding profile by year for the estimated duration of the proposed project.

For projects requiring shared funding, identify the amount, source, type, and purpose.

Identify any optional funding profile and its limitation or impact to the proposal.

PROPOSAL COORDINATION

Describe the process used to coordinate the proposal with other Services, Defense Agencies, committees, and test users.

Provide any known references indicating concurrence and validation of the proposal.

APPENDIX C

TEST PACKAGE DIRECTIVE (TPD) FORMAT

The TPD is prepared by OSD and forwarded to the Service/Defense Agency as direction for developing a test capability. It required the Service/Defense Agency to complete the Project Management Plan (PMP). TPDs will contain the following information:

PROGRAM ELEMENT: 0604940D (*CTEIP P.E. Number—does not change*)

TPD NUMBER: *[Sample]* 97-A-1-01-9701

A five-part number as follows from the sample:

- a. 97 = Year project was initiated
- b. A = Lead Service initial (A—Army; N—Navy; AF—Air Force; D—Defense Agency)
- c. 1= Reliance Functional Area (1—Air Combat; 2—Land Combat; 3—Sea Combat; 4—Space Combat; 5—Common Range Instrumentation; 6—Electronic Combat; 7—Armament and Munitions; 8—Targets; 9—Test Environments; and 10—Control, Communications, Computers, and Intelligence.)
- d. 01 = Sequential project number within the Reliance Functional Area
- e. 9701 = Year project was initiated and sequential TPD amendment.

DATE: [Date TPD is signed.]

FUNCTIONAL AREA: [One of the Reliance Functional Areas as describe above]

PROJECT NUMBER: *[Sample]* 1-01-A

A three-part number as follows from the sample:

- a. 1= Reliance Functional Area
- b. 01 = Sequential project number within the Reliance Functional Area
- c. A = Service initial)

PROJECT NAME:

1. PROJECT DESCRIPTION: This section provides a concise description of the project in terms of the mission need to be satisfied, operational requirements, and technical characteristics/capabilities.

2. PROJECT DIRECTION: This section states how the project will be organized and provides specific project issues and guidance to resolve them.

- 3. SCHEDULE REQUIREMENTS:** This section will provide key milestones for the implementation of the project derived from the approved CTEIP Project Proposal.
- 4. PROJECT FUNDING:** This section provides a funding profile based on the latest approved budget and programming and is provided for planning purposes only. It includes previous funding, budget year plus two, and funding to complete project.
- 5. SPECIAL INSTRUCTIONS:** The following instructions are to be considered to be standing requirements for all projects, as applicable, and will not be repeated in the TPD. This section will also contain any project-specific instructions and exceptions or expansions to the standing special instructions.

The Project Director will:

- a. Prepare and forward Monthly Reports of actual obligations/expenditures and project status (performance, cost, and schedule). Identify deviations from the baseline with reasons for deviations. These reports are due to the CTEIP Program Element Manager 20 calendar days after the end of the month being reported. The format for the report is contained in the CTEIP Planning and Execution Guide. The report should be signed by the Project Director and transmitted by both facsimile and in electronic format (e-mail).
- b. Maintain a complete historical record of obligations and expenditure data such that the historical data, together with the required two-year spend plan, will depict the financial record for the project. The historical data is to be included in the PMP and annual updates.
- c. Prepare and present a Project Status Briefing at the CTEIP Mid-Year Review normally scheduled in April of each year, using the format specified in the CTEIP Planning and Execution Guide.
- d. Prepare and maintain a documentation trail of requirements. The documentation should specify those requirements for which the project was originally initiated, all subsequent requirement changes (increases or decreases), and corresponding changes to the project baseline. A matrix summarizing this information should be included in each PMP update.
- e. Prepare a current summary level Project Quad Chart and forward to the CTEIP Program Element Manager with the PMP update, and/or within 30 days of a major change in program status. The Quad Chart should have the following sections: Project Requirements, Project Description, Current Status, and Project Schedule/Funding, and be in accordance with the requirement of the Joint Test and Evaluation Project Quad Chart for the Needs and Solutions submissions. Submit the Quad Chart in both hard copy and electronic formats.
- f. Conduct an internal management self assessment on an annual basis. The self assessment should cover, as a minimum, the technical status versus the validated and approved project baseline, the internal controls on financial activities, contract status and activities, schedule status versus approved milestones, personnel status,

- documentation requirements, and pending project issues and decisions. For CTEIP projects with a total estimated cost of over \$5M over the life of the project, the Project Director is encouraged to use the applicable parts of the internal checklists developed for acquisition programs within his Service or Agency as a basis for the internal self assessment. A brief summary of the self- assessment and any corrective actions should be forwarded to the CTEIP Program Element Manager in January of each year.
- g. Forward lists of documents containing results of studies, reviews, surveys, etc. conducted in response to this TPD or other CTEIP Program Element Manager direction to the CTEIP Program Element Manager. Provide copies on request.
 - h. For any planned procurement or development of C4I equipment that will require telecommunication of data, provide an input on the requirements to the Defense Information Infrastructure Master Plan.
 - i. Ensure that the development of any computer/software-based system or subsystem within the project uses an Open System Architecture to facilitate integration and compatibility with other T&E systems and accommodate future upgrades.
 - j. The Project Director will notify the CTEIP Program Element Manager in writing within 10 days whenever the following thresholds are breached or projected to be breached within the next 30 days. Breaches projected to occur outside of 90 days should be highlighted in the Monthly Report.
 - (1) Cost changes of 10% for any fiscal year's funding or for the project's total cost.
 - (2) Schedule slips of 90 days or more for milestones in the PMP.
 - (3) Failure to meet technical goals established in the TPD or PMP.
 - (4) Changes in requirements or project scope that are projected to impact the approved Project Baseline, goals, procurement needs, or resources.

STATEMENT OF UNDERSTANDING: The Test Package Directive, together with the approved Project Management Plan, constitute a contract between the CTEIP PEM, the lead Service or Defense Agency, and the Project Director by which the project will be executed

APPENDIX D

PROJECT MANAGEMENT PLAN FORMAT

This appendix provides the format and contents of the Project Management Plan (PMP). The PMP is written annually in response to the annual instructions to the project provided by the Test Package Directive (TPD). The PMP should be considered to be a living document that provides the management and acquisition approach, technical concepts, costs, and schedule required to develop the needed test capability. The PMP is prepared by the Project Director, coordinated through the Service/Defense Agency CTEIP Resource Manager and approved by the CTEIP Program Element as a contract between the Service and OSD documenting the manner by which the project execution will occur. The PMP is to be developed in a concise yet complete manner and is nominally not to exceed 20 single-spaced pages.

SIGNATURE PAGE

DATE: [Date approved by the CTEIP Project Director]

PROJECT NUMBER: [As contained in the Test Package Directive]

PROJECT NAME: [As contained in the Test Package Directive]

CTEIP RESOURCE MANAGER/LEAD ORGANIZATION: [Name and signature of CTEIP Resource Manager (TERC Member)/Responsible lead organization.]

PROJECT DIRECTOR: [Name and signature/organization code/phone]

1. PROJECT DESCRIPTION *(1-2 pages)*

This section should describe the project in sufficient detail to clearly portray what the project is and what it is to accomplish and must relate to the project description in the TPD. The section includes concise answers to the following issues:

1.1 Need/Requirement for the Project. Refer to the validated Need and discuss the following.

- a. Joint considerations.
- b. Benefit to users.
- c. Risks in testing that are alleviated.
- d. Anticipated demand for the test capability.
- e. Current/long-term testing requirements for all the Services that will be satisfied.

1.2 Technical Approach.

- a. Describe major technical efforts to be pursued during Phase I and Phase II execution.

- b. Include schematics, graphics, and other illustrations to show significant developments and internal/external interfaces. Complex projects should include a third-level architectural diagram containing hardware and software configuration items.
- c. Discuss the following aspects of technical approach:
 - (1) Key concepts or technical approaches. Define and explain these concepts.
 - (2) Design strategy. Discuss the standardization, commonality, interoperability, and life cycle supportability elements that have been incorporated into the design strategy.
 - (3) Key technical characteristics.
 - (4) Test scenarios to be supported.

1.3 Results of Related Studies and Analyses. Discuss how the results of studies and analyses were used in determining the technical approach.

2. CRITICAL/KEY ISSUES *(1-2 pages)*

This section should include a discussion of issues involved in developing and implementing the products of the project. Considerations may include the following:

2.1 Limitations and Constraints. Discuss the following:

- a. Performance thresholds inherent in the design strategy and how they relate to satisfying the test requirements for new weapon systems.
- b. Technical areas that require verification of feasibility.
- c. Feasibility of transporting or replicating the capability to other test locations.
- d. Criticality of the project schedule to meet the known test requirements.
- e. Number of units that will be required and where they will be located.
- f. Stability of the user community and whether the project can support the projected workload.

2.2 Other External Factors.

- a. Dependence of the project on completion of other related efforts, such as separately funded construction, availability of test resources, pending legislation, etc.
- b. Environmental issues.

3. MANAGEMENT APPROACH *(3-5 pages)*

This section describes how the Project Director will allocate resources and manage the project. Include organizational charts and work breakdown structure charts where appropriate. This section should discuss the following:

3.1 Project Organization.

- a. Organization of the Project Office organized and its echelon in the sponsoring Service or Defense Agency. Discuss the chain of responsibility to OSD.
- b. Size (full/part time) and composition (rank/grade, responsibilities) of the Project Office staff.
- c. Other functional support to the Project Director.
- d. Participation and responsibilities of other Services, Defense Agencies, and users in the management of the project.
- e. Identification of Integrated Product Teams, if any.
- f. Procedures or formal agreements that have been instituted for coordination and resource sharing with other Services/Defense Agencies/organizations.
- g. Measures being taken to ensure compliance with DoD Open Systems requirements.

3.2 Technical Management.

- a. Means to define specific technical requirements.
- b. Design strategy and feasibility of using non-developmental items.
- c. Promotion of standardization, commonality, and interoperability.
- d. Required trade studies to make design decisions.
- e. Development of internal and external system interfaces.
- f. Procedures for the control of performance baseline.
- g. Critical testing.

3.3 Acquisition Strategy.

- a. Development and approval of an acquisition plan.
- b. Service/Defense Agency policies or regulations to be followed and any rationale for non-compliance.
- c. Required specific studies/analyses that may impact the acquisition plan.
- d. Determination of contracting versus in-house work.
- e. Contract(s) type and rationale for selection.
- f. Rationale if sole-source procurement will be used rather than competitive procurement.
- g. Identification of source selection authority.
- h. Plan for making available any GFE/GFM to contractors.
- i. Contract management approach.

3.4 Cost Control

- a. Development of program control function.
- b. Cost and schedule performance measurement system.
- c. Determination of estimates for follow-on acquisitions and O&M.
- d. Results of independent cost analysis (ICA) (if conducted at the request of the CTEIP Resource Manager).

3.5 Activation.

- a. Plan to test, demonstrate, and certify the capability, including test assets and resources are required.
- b. Transition of project to final operational capabilities, including source of funding and when it will be required.

3.6 Risk Management.

- a. Risk elements and contingency planning.
- b. Establishment of objectives and methods to continuously assess risks.
- c. Mitigation of risks.

4.0 FUNDING (2-3 pages)

This section identifies the funding resources required to implement the project and a plan as to how they are projected to be obligated and expended. It includes the following:

4.1 Funds Required.

- a. CTEIP funding required by fiscal year through project completion for in-house contracts and other supporting organizations.
- b. At a minimum, funding for the following must be identified:
 - (1) Project management
 - (2) Design/engineering
 - (3) Fabrication/equipment
 - (4) Construction (Special funding documents may be required. Contact Service MILCON offices for any specific requirements prior to presenting project to CTEIP for consideration.)
 - (5) Activation.

4.2 Obligation/expenditure plan.

- a. Two-year forecast, by month, of all obligations and expenditures for the CTEIP funds. The years for the forecast are the PMP year and PMP year plus one.
- b. Explanation of any disproportionate amount during any fiscal year.

4.3 Shared Funding.

- a. For projects requiring shared funding, the amount, source, type, and purpose.
- b. Reasons for the shared funding and the results to be achieved from the different funds, including CTEIP funds.
- c. Explanation of how the funding from the different sources is integrated into the project

plan as well as how interdependency issues maybe avoided.

4.4 Follow-On Costs.

- a. Estimates for follow-on funding associated with operating and maintaining the capability after transition from CTEIP funding.
- b. Planning and coordination of follow-on funding.

5. SCHEDULE (2-3 pages)

This section provides the scheduling information required by the Project Director to efficiently schedule all project activities, measure progress, correct slippage, and report deviations from the TPD schedule. The PMP schedule should be consistent with that in the TPD.

Include a milestone chart for Phase I and Phase II (not a bar chart) with standard symbols. For projects consisting of major systems and/or multiple location implementation, list applicable milestones individually. Minimum milestones to be listed (or as provided in the TPD) are listed below. However, other scheduled project reviews, delivery of critical resources, completion of external tasks, and major decision points should be included.

Maintain key milestones across PMP updates and include estimated as well as actual date of completion and explanations for variations.

Phase I

- Project initiation
- Project organization established (Project Office, IPTs, Committees)
- Major Phase I contracts awarded
- Key trade-off studies initiated/completed
- Prototype completed
- Demonstration completed
- Design approach defined
- Memoranda of Understanding completed
- TCRD initiated/completed
- TCBA initiated/completed
- Project Baseline initiated/completed
- LCSP initiated/completed
- Validation and verification initiated/completed
- Phase I completed

Phase II

- Phase II initiated
- System specification initiated/completed
- Major procurement documentation completed

DRFP/RFP release
Major Phase II contract awards
Requirements/design reviews (SDRs, PDRs, CDRs)
Fabrication/integration/construction initiated/completed
Acceptance testing initiated/completed
Transition plan initiated/completed
Initial operational capability (IOC)
Full operational capability (FOC)
Complete Project Final Report

6. STATEMENT OF UNDERSTANDING

The approved Project Management Plan, together with the Test Package Directive, constitute a contract between the CTEIP PEM, the lead Service or Defense Agency, and the Project Director by which the project will be executed.

APPENDIX E

TEST CAPABILITY REQUIREMENTS DOCUMENT FORMAT AND SAMPLE

This appendix is provided to assist in the preparation of the Test Capability Requirements Document (TCRD). The TCRD is a required document that is completed during the first half of Phase I of the Central Test and Evaluation Investment Program (CTEIP). The TCRD is one of four documents required before a CTEIP project can transition into EMD (Phase II). Presented below is a description of the major elements of the TCRD and a sample of the corresponding elements. The samples provided should only be considered as a template. The actual TCRD should be scoped to contain the required level of detail considering the complexity of the test requirement.

Section headings are listed in the appropriate order. Each section contains a descriptive narrative on the subject matter required for that section. Additional sections and appendices should be provided as needed.

TEST CAPABILITY REQUIREMENTS DOCUMENT (TCRD)
FOR THE
[Full Project Title]

[DD – MMM – YR]

[Lead Service Point of Contact]
[Phone Number]
[E-mail]
[Test Activity]
[City, State, Zip Code]

OSD direction for *[Enter Title]* is documented in Test Package Directive number *[Enter TPD Number]* dated *[Date]*

APPROVAL SHEET

TCRD FOR THE *[CTEIP/JOINT SERVICE PROJECT NAME]*

Developed by:

CTEIP Project Manager

CTEIP Deputy Project Manager

CTEIP Deputy Project Manager

*[CTEIP Project
Manager Name]*

*[CTEIP Deputy Project
Manager Name]*

*[CTEIP Deputy Project
Manager Name]*

Reviewed by:

Army TERIB Co-Chair

Navy TERIB Co-Chair

Air Force TERIB Co-Chair

*[Army TERIB
Co-chair Name]*

*[Navy TERIB
Co-chair Name]*

*[Air Force TERIB
Co-chair Name]*

Approved by:

Army BoOD Principal

Navy BoOD Principal

Air Force BoOD Principal

*[Army BoOD
Principal Name]*

*[Navy BoOD
Principal Name]*

*[Air Force BoOD
Principal Name]*

TCRD Coordination Sheet

<u>Name</u>	<u>Organization</u>	<u>Signature</u>	<u>Concur/Nonconcur</u>
-------------	---------------------	------------------	-------------------------

[As needed, list all organizations involved in the CTEIP program – include users and developers to ensure clear understanding of required operational characteristics.]

EXECUTIVE SUMMARY

This section will provide a summary of the key test capabilities needed to meet identified testing Needs.

[Sample]

The Office of the Secretary of Defense sponsored Central Test and Evaluation Improvement Program had submissions from the three Services involving signature measurement instrumentation systems. It was concluded that benefits would be realized if these efforts were combined into a single program. The Tri-Service Signature Measurement And Database System (TSMADS) program was initiated to develop the next generation of signature measurement instrumentation systems. TSMADS will develop four distinct instrumentation suites; the Air-to-Air Signature Measurement System, the Air-to-Surface Signature Measurement System, the Ground Signature Measurement System, and the Acoustic Signature Measurement and Unaugmented Tracking System.

Modern “smart” weapon systems rely on the spatial and spectral electromagnetic and acoustic signatures of threats to acquire, track, engage, and, depending on the scenario, to ultimately destroy them. Development and test of these weapons systems requires the signature characteristics of threats and test targets be accurately known. In addition to measurement of threat systems, TSMADS developed instrumentation will characterize the signature of blue systems for the purpose of developing countermeasures, enhancing low observable technology, and active masking techniques to defeat aggressors.

The Department of Defense (DoD) sponsored two surveys specifically designed to determine shortfalls in the availability of signature data necessary to support the development and test of smart weapons and avionics systems. The major areas of data shortfalls were determined to be:

- a. Infrared (IR) and Ultraviolet (UV) spatial/spectral/temporal signatures of aircraft, missiles, countermeasures, and the background clutter associated with them.
- b. Near range and dynamic Millimeterwave (MMW) signatures of aircraft and mobile surface targets.

Shortfalls in instrumentation are generally common to all Services. A joint development of the required capabilities is the most cost effective approach to meet the tri-Service requirements. The TSMADS program will provide DoD with a more common/inter-operable capability to make advanced signature measurements and provide data that are required for the test and evaluation (T&E) of guided and unguided munitions, unmanned vehicles, and platform sensors. TSMADS has determined the current and future requirements for signature data; compared those requirements with existing signature measurement capabilities; determined common tri-Service shortfalls; and will jointly develop common software, hardware, and data format instrumentation to address the shortfalls.

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1.0 General Description of Need

1.1 General System Description

Provide general description of the test capabilities needed, which programs will be supported by this new test capability, and why this capability is needed and potential impact to the warfighter.

[Sample] Smart guided and unguided weapons, unmanned vehicles, and reconnaissance and avionics systems exploit the unique signatures of threats to detect, locate, characterize, track, and/or destroy them. They use detailed spatial and spectral electromagnetic and acoustic characteristics of threats and their environments to select and engage desired targets with a high probability of success and a low probability of false alarm. Development and test of these weapons systems requires the signature characteristics of threats and test targets be accurately known. Additionally, the susceptibility of many U.S. vehicles to detection by threat sensors and their resultant operational effectiveness and survivability is dependent on measurement and control of their own signatures. Signature data on U.S. assets is required to exploit low observable technology in an effort to reduce probability of detection and increase survivability. This program will develop signature measurement capabilities to support Army, Navy, and Air Force requirements. They are the Air-to-Air Signature Measurement System (AASMS), Air-to-Surface Signature Measurement System (ASSMS), Ground Signature Measurement System (GSMS), and the Acoustic Signature Measurement and Unaugmented Tracking System (ASMUTS). This program will support joint DT&E, OT&E, tactics development, and training operations.

Existing signature measurement capabilities do not satisfy all data requirements. Shortfalls in instrumentation are generally common to all Services. A joint development of the required Department of Defense (DoD) capabilities is the most cost effective approach to meet the tri-Service requirements. This program will provide DoD with a more common/inter-operable capability to make advanced signature measurements and provide data that are required for the test and evaluation (T&E) of guided and unguided munitions, unmanned vehicles, and platform sensors. Current and future requirements for signature data have been determined and compared to existing signature measurement capabilities; common tri-Service shortfalls have been determined. Common software, hardware, and data format instrumentation will be jointly developed to address the shortfalls. The systems will be operable at all DoD locations that have the required support infrastructure. These systems will start to become operational in FY00 and provide support as needed into the future.

Inability to develop new signature measurement capabilities and the means to store, search, and retrieve signature information will greatly impact DoD's capability to support air-to-air and air-to-surface guided munitions weapons program development and potentially impact the susceptibility of U.S. assets to detection from foreign technology. Basing system development and test on the currently available data is likely to adversely affect the operational capability of new systems.

1.2 Anticipated Operational Support Concepts

Provide general information on where and how the test capability will be used.

[Sample] The instrumentation system will be available for worldwide operations in support of Army, Navy, and Air Force T&E requirements and weapon system evaluation programs. The test capabilities will be integrated into the existing Major Range and Test Facility Bases (MRTFB) infrastructure.

2.0 Shortcomings of Existing Capabilities.

Provide clear statement of the deficiencies of existing test capabilities (DoD, non-DoD, and contractor facilities) with respect to meeting current and planned test operational requirements. Provide list of any studies/surveys that identify deficiencies and summary of findings. Classify shortcomings by specific categories and list as sub-elements (e.g., for signature measurements, there could be shortcomings in IR, MMW, and acoustic signature measurements).

2.1 Signature Measurement Capability Shortfalls

[Sample]

DoD has sponsored two surveys specifically designed to determine shortfalls in the availability of signature data necessary to support the development and test of smart weapons and avionics systems and to determine the DoD capabilities to measure the required data. The first survey was completed in 1992 and the second, a follow-on effort, in 1996. The surveys determined that, although the Services have many “databases” containing “signature data”, the shortfalls in the availability of the required data were significant. The major areas of data shortfalls were determined to be:

- a. IR and UV spatial/spectral/temporal signatures of aircraft, missiles, countermeasures, and the background clutter associated with them.
- b. Near range and dynamic MMW signatures of aircraft and mobile and fixed surface targets and the background clutter associated with them.

2.2 Technology Related Shortfalls

[Sample]

The proliferation of low cost image intensifiers requires that vehicle Near IR (NIR) signatures be properly characterized. Third world countries that may not be able to afford the more expensive thermal systems can often obtain these low cost NIR systems. Calibrated information derived from NIR images of both foreign and domestic targets are needed to evaluate the vulnerability of military vehicles with and without camouflage. Calibrating these images is very challenging for several reasons. First, the noise levels are very high as the state-of-the-art is constantly being pushed to obtain images at successively lower light levels. Second, the gain amplifiers of almost all NIR systems are designed to block the average intensity value of incoming light while passing

the fluctuations to prevent damage to the highly sensitive intensifiers. Finally, spatial non-uniformity of the optics, intensifier, and imager must be controlled to acceptable values. There are currently no off-the-shelf systems available that deal with all these aspects of calibration for image intensifiers.

2.3 Signature Database Shortfalls.

[Sample]

Existing signature databases do not facilitate the sharing of information across the three Services and the Defense agencies. Signature data currently are archived in many databases located throughout the DoD community. It is very difficult for a user to locate and identify data required for a particular application. Much of the available signature data is in “hard-copy” reports in a large variety of formats. There is a need to index current and projected signature data and to strive for more consistent computer compatible formats for future signature data. The intelligence community has arrived at the same conclusion for threat signature data. A joint T&E/Intelligence signature data network, the National Threat/Target Signature Database System (NTSDS), is being developed. The goals of this project are to make signature data more accessible to users by working with the NTSDS and by developing signature measurement instrumentation systems that utilize NTSDS core data schema, supplemental data elements, local data elements, and common data formats.

3.0 Capabilities Required

3.1 System Performance Characteristics.

Specific system requirements for addressing each shortfall are discussed in the following paragraphs. This section is the most crucial in defining the required test capabilities that need to be developed/acquired and from which cost will be based. Approval of the TCRD by the T&E Executive Agent will be based on the accuracy and supporting rationale of the details provided in this section. Supporting rationale for the thresholds and objectives values should be provided

Objectives and Thresholds: each parameter shall include both an objective and a threshold value. If no objective is specified, the threshold value shall be the objective value. Threshold values shall be individually set for each program based on the characteristics of the program (e.g., maturity, risk, etc.). Thresholds and objectives are defined below.

- a. Objective. The objective value is that desired by the user and which the PM is attempting to obtain. The objective value could represent an operationally meaningful, time critical, and cost-effective increment above the threshold for each program parameter. Program objectives (parameters, and values) may be refined based on the results of the preceding program phase(s).
- b. Threshold. The threshold value is the minimum acceptable value that, in the user's judgment, is necessary to satisfy the need. If threshold values are not achieved,

program performance is seriously degraded, the program may be too costly, or the program may no longer be timely. The spread between objective and threshold values shall be individually set for each program based on the characteristics of the program (e.g., maturity, risk, etc.)

Use of Tables is encouraged specifying both thresholds and objectives. Appendices should be used as needed.

[Sample]

SPECIFIC [CTEIP PROJECT TITLE] REQUIREMENTS		
SYSTEM CAPABILITIES AND CHARACTERISTICS	Thresholds	Objectives
<u>4.2.1 Air-to-Air Signature Measurement System</u>		
1. Multispectral Suite		
a. UV	200 to 320 nanometers	200 to 320 nanometers
b. IR	3.5 to 5.0 micrometers	1.5 to 5.5 micrometers
2. Infrared Measurement System		
a. Spectral Band	3.5 to 5.0 micrometers	1.5 to 5.5 micrometers
b. Spectral Resolution	10 wavenumbers	1 wavenumber
c. Measurement Field-of-View	1 degree (hor. and vert.)	1, 2, 5 degrees (hor. and vert.)
d. Number of Detector Elements	10x10 (100 elements)	32x32 (1024 elements)
e. Spatial Resolution	1.7 MRAD	0.5 MRAD

3.2 Other Required System Characteristics

This section will provide any additional test requirements/constraints that need to be identified to ensure the developed instrumentation compatibility and usability by the test ranges. Security and test process requirements should be included.

[Sample]

- a. Programmable signal conditioning for test preparation from a remote site.
- b. Delayable output to permit the storage of acquired data for transmission after the test article has been fired.
- c. Radio Frequency (RF) data transmission for calibration/checkout and for the launch sequence.

- d. To minimize system downtime Built in test/Built in test equipment (BIT/BITE) is required.
- e. A readily serviceable and rechargeable power source capable of supporting at least six test cycles. A test cycle could range from several seconds for a direct fire weapon to several minutes for some missile systems.
- f. The system will be operated in the hot, cold, and very cold test range environments.
- g. Compatibility with test range frequency allocations is required. Disposable components must be disposed of on the ranges without causing adverse environmental impacts.
- h. System will not interfere with the safe operation of the test item.

4.0 Logistic and Infrastructure Support Requirements

This section provides information on the logistic support requirements which will impact the design and operational and maintenance cost of the required instrumentation.

4.1 Logistics and Readiness

This section will discuss how the developed instrumentation will be incorporated into existing test ranges. Include general discussion of proposed logistic supporting - detailed information should be provided in the Lifecycle Support Plan. Also include operations and maintenance cost requirements and any reliability, availability, or maintainability requirements.

[Sample]

System requirements mandate that the capabilities be inter-operable with existing tri-Service T&E instrumentation measurement and telemetry capabilities without requiring major modifications or additional resources to support them. The system will be designed to minimize preventative or scheduled maintenance actions. Systems must have full operational power after calibration and check out. System availability for a fully configured system must be greater than 0.95. Operating and maintenance costs of the instrumentation system must not make its use prohibitive.

4.2 Maintenance Planning

This section will discuss the planned maintenance concept to be used to maintain the operation of the system throughout its lifetime. Details are to be provided in the Life Cycle Support Plan. Key maintenance issues should be identified.

[Sample]

Test instrumentation systems will be designed, configured, fabricated, and installed in a custom application at each of the test ranges. Some locations will require several identical systems. However, total quantities to be acquired are too small for depot level maintenance. The instrumentation systems will be maintained by each range under a centrally-funded contract

support program. Details of cost sharing between the ranges and estimated costs will be identified in the he Life Cycle Support Plan (LCSP).

The supporting ground station equipment and software is to be maintained by the individual ranges, but no highly unique hardware or software updates are anticipated. Test range telemetry personnel will perform maintenance requirements.

4.3 Infrastructure Support Equipment.

This section describes the range equipment needed to support the CTEIP project. In many instances, the instrumentation developed will be an integrated part of the range instrumentation system requiring such support as telemetry, computer resources, utilities, and transportation. Also provide details on range communications infrastructure requirements, especially for instrumentation that will be inter-linked with other ranges for modeling and simulation.

[Sample]

Support equipment required to operate the CTEIP instrumentation suite includes: telemetry antennae, receivers, data demultiplexers, processors, specialized test/calibration equipment, unique system programming tools/systems, computer resources and specialized assembly tools. Support equipment that does not currently reside at the individual test ranges will be acquired along with the new instrumentation; estimate of acquisition costs for required instrumentation will be identified and included in the TCBA analysis.

Data collected and processed will be linked with the Guided Weapons Test Facility at Eglin AFB and the Roadway Simulator at Aberdeen Proving Ground. Existing T-1 data links will be used for transmittal of data for real-time modeling and simulation exercises.

4.4 Human Systems Integration

This section will discuss the personnel requirements for operation and maintenance of the instrumentation. The skill level available at the test ranges will directly impact the design and operation of the test instrumentation.

[Sample]

Operations and maintenance of CTEIP project will be performed by journeyman level test range instrumentation and telemetry personnel. Training on the operation, check out, calibration of configured systems and installation into the system under test will be required for range support personnel. Routine maintenance can also be performed at the journeyman level for basic

diagnosis and maintenance. More complex repairs/maintenance will be performed by the logistic contractor support.

4.5 Computer Resources

With the ever-increasing dependency of test instrumentation with computers and the increasing requirement for real-time data monitoring/distribution, this section needs to discuss the computer (hardware and software) resources support requirements. Important to provide information on the scope of computer resource support needed and whether that support is currently available. Communications interfacing requirements should be detailed in Section 5.

[Sample]

A computer or workstation will be required for system configuration and programming of the hardware integrated into the test article. Telemetry ground station/data processing center computer resources will be used to reduce and process the acquired test data. These systems are currently in place at the test centers where the new instrumentation will be located.

4.6 Transportation

This section will discuss the transportation requirements for the instrumentation project. This section is especially important for instrumentation projects that are being designed for movement from one location to another. One of the objectives of CTEIP is to exploit mobile test instrumentation capabilities as an alternative to fixed facilities where economically and technically feasible. Included in this section should be a description of the type of roads that will be used for traveling so that resistance to shock and vibration can be designed into the instrumentation system.

[Sample]

The instrumentation suite will be self-contained in an mobile shelter. The shelter must be transportable by a 5-ton or less vehicle. Instrumentation suite will be transported on interstate roads and hard-packed gravel roads at test sites.

4.7 Environmental Support

This section will list any environmental considerations that need to be considered in the design of the instrumentation project.

[Sample]

Products and configured systems must be low cost, small, rugged, and versatile. System must be safe for handling by operational and maintenance personnel before, during, and after use.

4.8 Other Logistics Considerations

Provide details of other logistic considerations not previously identified in Sections 4.1 through 4.7.

[Sample]

Documentation required to re-procure expendable instrumentation, configure, operate and support the ground system components, describe the operation, assembly/configuration and integration of HSTSS module's and their interface characteristics shall be procured for the HSTSS and its supporting equipment.

5.0 Standardization, Interoperability and Commonality

A goal of CTEIP is to achieve consistency, commonality, and interoperability across the Services in test instrumentation. These goals are consistent with the goals to decrease acquisition costs as well as decrease Service operations and maintenance costs. This section should provide how interoperability and commonality of hardware/software will be maximized to reduce overall ownership costs.

[Sample]

Maximum adherence to the guidelines of the Range Commanders Council Telemetry Standards (IRIG 106) will enhance the interoperability of the developed telemetry systems across the DOD test ranges. The concept and equipment are exportable to other DOD ranges. The system will be designed to be used with existing facilities and range telemetry ground stations where possible. The system should be designed to be maximally compatible with present telemetry equipment. Portable telemetry ground stations will extend the system application beyond the confines of an instrumented test range. Recent studies have shown the future requirement for a mix of missile and gun launched munition systems. Ruggedized measurement devices/systems are a joint interest and have the potential for joint development increasing standardization of test methods through commonality of test systems/devices.

6.0 Schedule Considerations

Provide a list of programs that will be supported by the developed instrumentation. Include scheduling information and discussion of potential impact to the acquisition program.

[Sample]

Current plans are to have the initial operating capability for the AASMS in FY00, the ASMUTS

in FY01, and the ASSMS and the GSMS in FY03. Programs with stated capability need date are listed below.

Program	Need Date	Service
F-22	FY98	Air Force
Directed Infrared Countermeasure (DIRCM)	FY98	Joint
General Test Support (GTS)	FY98	Army
Future Scout Vehicle (FSV)	FY99	Army
Advanced Strategic Tactical Expenditures (ASTE)	FY99	Air Force
Common Missile Warning System (CMWS)	FY00	Joint
Surface Ship Torpedo Defense (SSTD)	FY01	Navy
Unmanned Underwater Vehicle (UUV)	FY01	Navy
Lightweight Hybrid Torpedo (LHT)	FY02	Navy
Command Control Vehicle (CCV)	FY05	Army
Future Tank System (FTS)	FY07	Army

7.0 Discussion

Use this section to provide any additional information believed necessary to convey to the T&E Executive Agent and OSD the required capabilities needed to support current and planned weapons systems testing. Include any supporting rationale/studies complete by the Services to validate required testing capabilities.

[Sample]

The measurement and other technical requirements outlined throughout this Operational Requirements Document were derived from a number of user inputs. Testers and developers from all three services contributed to the development of the previously stated requirements. The technical requirements listed here represent approximately the 80% level; that is, 80% of all test configurations can be satisfied by HSTSS. As technology matures, Pre-planned Product Improvements (P³I) may be integrated into the HSTSS. Certain test scenarios will arise requiring specialized/unique instrumentation and must be addressed on a case-by-case basis.

APPENDIX F

TEST CAPABILITY BENEFIT ANALYSIS FORMAT AND SAMPLE

This appendix was prepared with the objective of assisting organizations required to conduct a Test Capability Benefit Analysis (TCBA) as part of proposing a test investment project under the Central Test and Evaluation Investment Program (CTEIP).). The TCBA is required to be developed and approved during Phase I of a CTEIP Phase I project. It contains a description of the major elements involved in the process of conducting a TCBA and a sample of the corresponding elements. The samples provided should only be considered as a template. An actual TCBA should contain additional levels of details and a broader consideration of the elements as may be warranted by the nature and complexity of the proposed investment. Additionally, the samples are based on a hypothetical proposal with a fictitious need and operational and technical description. Any implied endorsement or approval by the mentioned organizations is unintentional. Samples of appendices are not provided, but should be included in an actual summary of a TCBA.

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Provide as necessary.

Appendix A:	Summary of Existing Capabilities
Appendix B:	Summary of Functional Characteristics
Appendix C:	Benefit Analysis
Appendix D:	Alternative Cost-Benefit Details
Appendix E:	Plan of Action

Introduction

Provide relevant background information, purpose, and scope of the analysis.

1.1 Background

[Sample]

Before a Central Test and Evaluation Investment Program (CTEIP) project is approved to proceed to Phase II, the sponsoring Agency must address the effectiveness of the project in terms of cost and capability. This is accomplished by conducting a Test Capability Benefit Analysis (TCBA) to evaluate a set of alternatives that can meet or exceed the stated need. The TCBA will provide CTEIP decision-makers with justification for selecting a course of action, setting priorities, and allocating resources.

1.2 Purpose

[Sample]

This document provides a summary of the approach, the methodology used, and the results of the TCBA conducted in order to formulate a proposal to meet the needs of the Joint Test & Training Operations Control System (JTTOCS). Based on the results and conclusions, a recommendation is made for a preferred alternative to meet the need for JTTOCS.

1.3 Scope

[Sample]

The TCBA was conducted from a DoD-wide perspective by investigating all known joint weapon systems and their peculiar test and training requirements for an operations control system, such as those being used in Major Range and Test Facility Base (MRTFB) activities and other major training ranges. Emphasis is given to command, control, communications, and intelligence (C³I) requirements when joint testing or training is conducted in a coordinated manner. Solution alternatives are limited only to those requiring available and proven technology.

2.0 Test and Evaluation Need

This section should provide an update to the Need and Proposed Capability section of the CTEIP Proposal and the General Description of Need in the Test Capability Requirements Document.

[SAMPLE]

The acquisition of advanced technology programs and systems for joint operations is increasing as a result of new threat environments throughout the world. As a result, more test and training operations will often be conducted by more than one DoD component utilizing weapon systems and components capable of operating in a coordinated environment at sea, on land, in air, and in space. These operations will require the means of monitoring, controlling, and assessing the performance of large numbers of test and training participants employing complex weapon systems and C³I networks over wide geographical areas. This requirement supports the Joint Commanders Group for the test and evaluation initiative to increase joint testing as stated in the October 1995 Test Requirements Master Plan. It also supports and is consistent with the Project Reliance Test Capability Master Plan for the C³I functional area.

3.0 T&E Functional Areas

Provide the specific T&E functional areas and uses of the system or facility being proposed. Also, the need for interoperability, commonality, and supportability requirements for the functional areas must be included.

[SAMPLE]

3.1 Primary T&E Functional Area(s). The JTTOCS is predominantly related to the Electronic Combat and the Common Range Instrumentation functional areas. However, because its open architecture configuration and the requirement to support all warfare areas, it relates to all the Reliance functional areas.

3.2 Primary Uses. JTTOCS will support joint DT&E, OT&E, tactics development, and training operations for all warfare areas.

4.0 Assumptions and Constraints

Provide all the assumptions and constraints considered in the proposal including fiscal, technological, operational, and environmental considerations.

[SAMPLE]

4.1 Fiscal

- a. The system will be acquired during a 2-year period with IOC no later than the end of FY 2000.
- b. Only RDT&E funds will be allocated for the development.
- c. Funding support will be the responsibility of the host DoD Component(s).
- d. No Military Construction (MILCON) funding will be required.

4.2 Technological

- a. The system will be developed with available and proven technology (using non-

- developmental items)
- b. The system will have a useful life of 10 years.
- c. The system and its components will use all applicable Range Commanders Council (RCC) standards.

4.3 Operational

- a. The system will be installed in an existing MRTFB facility.
- b. Operations and maintenance are the responsibility of the host DoD Component(s).
- c. Coordination with the receiving MRTFB facility has been completed.

5.0 Alternatives Considered

Provide all reasonable and feasible alternatives considered in making the proposal, including existing facilities or systems or modification to facilities or systems being operated by other Services or DoD Components. These may include a combination of existing systems or projects.

[SAMPLE]

5.1 Approach. Alternatives ranged from the base case of using already-planned systems to providing a totally new system capable of meeting and exceeding all the functional performance requirements. Two other alternatives combined new and existing systems. All were considered fiscally and technically viable when the analysis was initiated.

- a. Base Case. Utilize operations control centers at existing test and training ranges as the need for joint operations arises. Their use will be dictated by the type of operation, the predominant operational environment, existing data communication, display, processing and reduction capacity, and geographical location. Candidate facilities are located at the Air Force Flight Test Center, the Naval Air Warfare Center Weapons Division, White Sands Missile Range, the Air Force Development Test Center, and the Naval Air Warfare Center, Aircraft Division.
- b. New Control Facility. Develop a new permanent system to be installed at an existing MRTFB. The system will consist of new data communications, display, processing, and reduction equipment. It will be connected via wide area networks to other remotely located facilities for post mission data analysis.
- c. Mobile Control Systems. Develop a transportable system with adaptable interfaces to existing control centers at selected MRTFB ranges. The system will consist of data communications, display, processing, and reduction subsystems peculiar to joint DoD Component testing and training. It will utilize existing command, control, and communications and support systems to the maximum.
- d. Upgraded Control Systems. Upgrade two existing operations control systems, one each at selected MRTFB ranges. The systems will be common with the exception of peculiar interfaces to existing control centers at each MRTFB range.

6.0 Measures of Effectiveness

Provide the measures of effectiveness (benefits) based on the performance thresholds and

objectives established for the system or facility.
[SAMPLE]

6.1 Benefit Discriminators. The most important benefit discriminators associated with a JTTOCS and considered in the analysis are:

- a. Interoperability achieved
- b. Response time
- c. Post-mission analysis
- d. Control capacity.

A benefit analysis for each alternative in terms of the above benefits is shown in Section 9.1 of this TCBA.

7.0 Cost Factors

Provide relevant costs considered in the analysis of the alternatives, including all reasonable life-cycle estimates, e.g., Military Construction, Operations, and Maintenance. These costs must be treated equally for all the alternatives. The cost data must be accurate and validated, and cost models used must be appropriate for the alternatives. Cost data should reflect past experience for similar activity, be documented as estimates from official documents, and be reproducible. Cost models should be standard models that are documented, and the procedures and techniques of the models should be well known within the cost community.

[SAMPLE]

7.1 Estimating Techniques. The following components of life-cycle cost were considered using the parametric method of cost estimating. This was possible as JTTOCS requires no development, and several other systems consisting of similar subsystems exist. The full life of JTTOCS was considered to be 10 years for all alternatives.

7.2 Life-Cycle Costs. The following cost factors were used to determine the cost for all four alternatives:

- a. System definition and planning
- b. Procurement cost
- c. Systems integration/installation/activation
- d. Facility cost
- e. Manpower operating cost
- f. Transportation costs
- g. Other.

8.0 Bases and Documentation Used

Provide a list of documents including results of studies and validated databases related to the project.

[SAMPLE]

8.1. List of Databases and Documentation. The selection of the following documents and databases was based on the need to identify joint weapon system programs, develop functional characteristics of JTTOCS, and determine characteristics and cost of similar existing and planned systems. Additionally, results of previous studies on similar requirements and systems were analyzed and relevant data was incorporated into the analysis.

- a. Joint Potential Designation List
- b. Test & Evaluation Asset Database
- c. Reliance Area TCMPs
- d. RCC reports on Range Operations Centers.

9.0 Cost-Benefit Analysis Results

The results of the analysis should be presented, including all costs and measures of effectiveness for all alternatives. Also, the results of analyses conducted should be provided, showing how changes in performance affect the utility, cost, and/or schedule of the alternatives. Include the criteria used for assessing the alternatives.

[SAMPLE]

9.1 Analysis Approach. The analysis was conducted by comparing alternatives within a range of benefits (consistent with the T&E mission requirements) and cost. These are summarized in Table 9.1 below.

BENEFIT	VARIATIONS
A. Interoperability achieved	1. All MRTFB and R&D Centers, Training Ranges/Systems 2. MRTFB and R&D Centers only 3. MRTFB only
B. Response time	1. Two days from scheduling 2. Five days from scheduling 3. Ten days from scheduling
C. Post-mission analysis	1. At main and two remote sites 2. At main and one remote site 3. At main site(s) only
BENEFIT	VARIATIONS
D. Control capacity	1. Control two full joint operations simultaneously 2. Control one operation only

Table 9.1

The cost of each of the alternatives and their variations were estimated and a comparison was made in an equal-cost and equal-benefit basis. These were subsequently ranked using weight factors derived from the following criteria in descending order:

- a. The capability should have the highest degree of interoperability to all the DoD Components.
- b. Post-mission analysis should be made possible at two sites.
- c. Response time should be minimal.

9.2 Analysis Results. The results of the TCBA are summarized in Table 9.2. Each alternative has been ranked and a preference has been indicated.

ALTERNATIVES	MEASURES OF EFFECTIVENESS COST (MILLION)				
	MOE A	MOE B	MOE C	MOE D	COMMENTS
I					
II					
III					
IV					

Table 9.2

10.0 Conclusions

Reasonable conclusions leading to the decision(s) contained in the proposal.

[SAMPLE]

Conclusions. The analysis concluded that alternative III, a mobile control system, provides the most effective capability for the T&E mission of JTTOCS. The major factors are:

- a. Interoperable with all DoD Components with little cost increase.
- b. Multiple site control and post-mission analysis. Although initial acquisition cost is higher than other alternatives, it provides added flexibility and a lower total life-cycle investment.
- c. Quick response capability and future growth potential.

11.0 Recommendation

Provide a recommendation for one of the alternatives to be pursued to satisfy the T&E need, which is based upon the information presented in the TCBA.

[Sample]

Based on the above, it is recommended that alternative III be selected as the best approach in meeting the JTTOCS requirements and that funding be provided starting in FY95 to initiate the preparation of technical specifications.

Appendices

Appendices should be provided as necessary.

APPENDIX G

LIFE CYCLE SUPPORT PLAN FORMAT AND SAMPLE

This appendix is provided to assist in the preparation of the Life Cycle Support Plan (LCSP). The LCSP is a required document during the execution of a project in Phase I of the Central Test and Evaluation Investment Program (CTEIP). Presented below is a description of the major elements of the LCSP and a sample of the corresponding elements. The samples provided should only be considered as a template. The actual LCSP should be scoped to contain the required level of detail considering the complexity of the instrumentation acquisition.

For CTEIP projects that will be fielded at multiple Services/multiple locations, agreements identified in this document will serve as the Memorandum of Understanding (MOU) between the Services.

LIFE CYCLE SUPPORT PLAN

FOR

[ENTER CTEIP/JOINT SERVICE PROJECT NAME]

[Enter Date]

[Lead Service Point of Contact]

[Phone Number]

[E-mail]

[Test Activity]

[City, State, Zip Code]

OSD direction for *[Joint Service/CTEIP Project Title]* is documented in Test Package Directive number *[TPD Number, date]*.

APPROVAL SHEET

**LCSP
FOR THE
*[CTEIP/JOINT SERVICE PROJECT NAME]***

Developed by:

CTEIP Project Manager

CTEIP Deputy Project Manager

CTEIP Deputy Project Manager

[Name]

[Name]

[Name]

Reviewed by:

Army TERIB Co-Chair

Navy TERIB Co-Chair

Air Force TERIB Co-Chair

[Name]

[Name]

[Name]

Approved by:

Army BoOD Principal

Navy BoOD Principal

Air Force BoOD Principal

[Name]

[Name]

[Name]

LCSP Coordination Sheet

Name

Organization

Signature

Concur/Nonconcur

As needed, list all organizations involved in the logistic support of the CTEIP program.

EXECUTIVE SUMMARY

This section will provide a summary of how the instrumentation developed and procured under the CTEIP program will be maintained throughout its lifecycle.

For multi Service/multi location programs, this section will identify roles and responsibilities for providing logistics support, logistic support concepts, Life Cycle Cost (LCC) estimates, post production cost sharing agreements, program office transition plans, and identification of sources of funds for long-term logistics support.

[Sample]

Tri-Service Signature Measurement And Database System (TSMADS) is an Army, Navy, and Air Force effort to develop signature measurement instrumentation systems to collect threat information needed in the development and test of present and future weapon systems. Capabilities developed under the TSMADS project will be: 1) Air-to-Air Signature Measurement System to be delivered to the Air Force Development Test Center/46 Test Wing (TW), Eglin AFB, Florida 2) Acoustic Signature Measurement and Unaugmented Tracking System to the Atlantic Undersea Test and Evaluation Center 3) Ground Signature Measurement System to be delivered to the Aberdeen Test Center (ATC) and 4) Air-to-Ground Signature Measurement System to be delivered to the AFDTC/46 TW. After IOC, each system will be integrated into the above mentioned Major Range Test Facility Base (MRTFB) infrastructure.

The Central Test and Evaluation Improvement Program will develop one of each of the above systems. Once these systems are integrated into the MRTFB, they will be available for test support through the particular MRTFB range scheduling process. The receiving MRTFB will be responsible for operation and maintenance and configuration management of their systems. Configuration control will be the responsibility of the host test range; the TSMADS program office will transition all responsibilities upon completion of the program and disband. Funding for operations and maintenance are the responsibility of the host Service.

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 - 5.2 Logistics and Engineering Support
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 - 5.4 Transition Plan
 - 5.5 Software
 - 5.6 Life Cycle Costs.
 - 5.7 Cost Sharing (as appropriate).
- 6.0 Documentation and Records
- 7.0 Milestone Schedule

List of Tables (as needed):

List of Appendices (as needed)

1.0 Purpose

The Lifecycle Support Plan (LCSP) provides guidance for the orderly logistic support of the Joint Service/CTEIP project. The plan addresses the maintenance, configuration control, and technology enhancement of a CTEIP project during its lifecycle. The plan also includes the transition of logistic support to Service/Defense Agency funding after the project completes the Engineering and Development phase.

[Sample]

This document provides guidance for the orderly management and support of TRACS by the Acquisition Product Manager (PM ITTS), Support Product Manager (AMSTI-LT), and the Southwest Range Alliance (SWRA). The LCSP will identify the planned logistic concept throughout its lifecycle including transition of the program management office.

2.0 Scope

This paragraph details the need for an LCSP for all CTEIP or Joint Service-funded projects. For instrumentation projects that are joint-service or CTEIP funded but reside at a single location, TERIB review/BoOD approval is only required from the Service where the instrumentation is located. For CTEIP or joint-Service projects where instrumentation is located at multiple sites, tri-Service TERIB review/BoOD approval is required.

[Sample]

TRACS, a CTEIP funded system, will be used at multiple locations and will therefore require tri-Service TERIB review and BoOD approval. This document will provide operation and maintenance costs and required cost sharing between the multiple users. This document will also discuss the proposed transition of the TRACS program office after production is completed

3.0 System Description

This group of one or more paragraphs provides the system description, major requirements, and intended users. Detailed operational performance (including logistic requirements such as reliability and maintainability) should be referenced to the Test Capability Requirements Document (TCRD). Infrastructure required to support this CTEIP program should be discussed.

[Sample]

TRACS will provide the capability to satisfy the requirements for Theater Missile Defense (TMD) and other testing requirements beginning in Fiscal Year (FY) 1999 and continuing beyond FY 2010 at multiple locations. The tests to be supported will occur at various locations and will include remote sites. It is impractical to modernize each location to support the required testing. Therefore, a highly transportable or mobile capability system for Command, Control, and

Communication (C3); integrated range safety; Time, Space, and Position Information (TSPI); instrumentation; data processing and analysis and multi-source sensor reception and processing is required. TRACS will provide accurate acquisition of high-speed TSPI data (see TCRD for more details). TRACS will be integrated into existing ranges infrastructure for power and telemetry of acquired data.

4.0 Program Management Structure

A description of the program management organization used during the development phase is to be provided. Emphasis should be placed on how the structure of the program office will ensure successful development of test capabilities to meet multi-Service test requirements.

[Sample]

The program management structure is tri-Service with the Air Force as lead organization. The Air Force program manager (PM) is assisted by Army and Navy deputy program managers (DPMs); DPM's will not be co-located. The program manager office will dissolve at the completion of the project. Overall management responsibilities are assigned to the 46th Test Wing, a unit of the Air Force Development Test Center (AFDTC) located at Eglin AFB, Florida. Deputy program managers at the Army's Aberdeen Test Center (ATC), Army Proving Ground (APG), Maryland and the Navy's Naval Undersea Warfare Center, Newport, Rhode Island will assist the PM with day-to-day management activities.

PM and DPMs have been appointed from organizations with resident technical test instrumentation experience. Program documentation is tri-Service developed insuring cross knowledge of the other Services' program activities. Acquisition documents such as specifications and statements of work will be Service developed with review and comment by the other Services. All components will be procured through the AFDTC acquisition organization under the direction of the PM.

5.0 Life Cycle Support Plan

These paragraphs detail how the CTEIP/Joint Service Project will be maintained throughout its lifecycle. The core logistics concept should be included here.

5.1 Maintenance Concept

This paragraph describes the maintenance support concept for the system. Elements should include the organization responsible for maintenance, when the support is to be initiated, and any other program-peculiar conditions. The description should include specifics such as the number and skill levels of personnel required to operate and maintain the system, type and numbers by Military Occupational Specialty (MOS), if any, quantities and costs of spares, and other supply issues affecting supportability. The Program Office will prepare a Sustainment Management Plan (SMP) as needed to support complex instrumentation acquisition programs.

[Sample]

The maintenance support for TRACS will be performed in-house by the Government and Southwest Range Alliance (SWRA) augmented with a competitive Life Cycle Contractor Support (LCCS) contract with the integrating contractor to be initiated upon Final Operational Capability (FOC). A two man-year level of effort is planned for logistics support. There is currently no requirement for military personnel to support the logistics effort. System spares will consist of, at a minimum, critical flight safety components. A more comprehensive spares list is currently under development.

5.2 Logistics and Engineering Support

This paragraph or paragraphs assign duties and organizational responsibilities for system logistics support. This should include a discussion of:

- a. *Initial spares*
- b. *Support equipment*
- c. *Technical data*
- d. *Training*
- e. *Packaging, transportation, handling, and storage*
- f. *Reliability, Availability, and Maintainability (RAM)*

[Sample]

PM ITTS will be responsible for budgeting and deploying a logistics support package of initial spares, support equipment (including special test equipment), technical data, and New Equipment Training (NET) concurrent with delivery of TRACS. SWRA will be responsible for budgeting and executing hardware maintenance and sustainment training for TRACS after fielding. PM ITTS will be responsible for all TRACS support until FOC. PM ITTS will provide acquisition engineering support.

5.3 Configuration Management

This block describes the responsibilities and parties responsible for configuration management throughout the life cycle of the project.

[Sample]

The Newtec Corporation will retain Configuration Management (CM) responsibilities for the hardware, software, and documentation at White Sands Missile Range (WSMR) until FOC. CM will transition to SWRA with the responsibility for documentation and updating of engineering drawings, manuals, and training documentation for the TRACS. The TRACS Configuration Control Board (CCB) will meet on a regular (TBD) basis to address any open CM issues.

5.4 Transition Plan

This paragraph delineates if acquisition or support management responsibilities for the system will be retained by the initiating organization or transitioned to another organization or agency. Fiscal year of transition, if any, and receiving organization will be included.

[Sample]

Management of the acquisition of TRACS devices will be retained by PM ITTS until Initial Operational Capability (IOC), currently scheduled for FY 99. Management of fielded TRACS devices will transfer to SWRA upon FOC, currently planned for fourth quarter FY 00.

5.5 Software

This paragraph or paragraphs assign duties and responsibilities for system software components. As a minimum, software configuration control should be discussed. The schedule for regular meetings of the Configuration Control Board (CCB) should be provided.

[Sample]

PM ITTS will be responsible for budgeting, funding, and executing software maintenance for the TRACS until deliveries are complete under the contract. PM ITTS will be responsible for providing Software Engineering Environment (SEE) software documentation reflecting the final production configuration and training on operation of the SEE. SWRA will become responsible for software support of TRACS once FOC is complete, documentation is received, and training on the SEE is completed.

5.6 Life Cycle Costs

[Sample]

Costs (\$K) FY98 Dollars

Element Description	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
LCC	\$102	\$595	\$123	\$159	\$152	\$140	\$143	\$170	\$271	\$526	\$213	\$218
Operation	\$0	\$0	\$0	\$70	\$71	\$73	\$75	\$77	\$79	\$81	\$83	\$85
Maintenance	\$0	\$0	\$0	\$90	\$81	\$67	\$69	\$93	\$192	\$446	\$130	\$134
Program Office	\$100	\$105	\$110	\$115	\$120	\$125	\$130	\$135	\$140	\$145	\$150	\$160

5.7 Cost Sharing (as appropriate)

Post-production cost sharing agreements should be identified. Services will identify sources of funding for operation and maintenance.

[Sample]

The program office will be maintained after completion of the CTEIP project with the emphasis on technology insertion and configuration control. Each of the Services will provide an equal portion to the operation of the program office. Operation of the program office will include planned technology insertion. Repairs to instrumentation will be paid by individual organizations as needed under the logistic support contract administered by the program office. All funding will be provided by the Services Improvement and Modernization institutional funding for the program office and by direct costs to customers for specific instrumentation repairs.

6.0 Documentation and Records

This section contains one or more sentences/lists, which detail documentation and/or records that will be provided for the system.

[Sample]

The following documentation and records will be provided no later than 31 March 1998:

- a. Operators Manuals and System Maintenance Manuals
- b. Training materials
- c. Hardware and software Technical Data Package
- d. Recommendations for system support spares

7.0 Milestone Schedule

Schedule and milestone information is listed here in either text or chart format. This information should parallel the information provided in the Program Management Plan (PMP).

[Sample]

Critical Design Review (CDR)	4 th QTR FY 97
Fabrication	4 th QTR FY97
Integration & Test	3 rd QTR FY98
IOC	4 th QTR FY99
FOC	3 rd QTR FY01
Program Office Transition	2 nd QTR FY02

APPENDICES.

Provide Appendices as appropriate.

APPENDIX H

PROJECT BASELINE FORMAT

The purpose of the Project Baseline is to provide a benchmark that reflects all changes to the project made in phase 1 and provides the baseline from which all requested changes to the project in phase 2 will be evaluated. The baseline defines the best estimates for the technical performance, schedule and cost of the project based on the results of the efforts accomplished in phase 1.

PROJECT NAME: [Full Project Name]

DATE: [Date Project Baseline is submitted]

PROJECT DESCRIPTION

This section contains a general description of the project as described in the TPD and the PMP. It includes the principal reason for implementing the project in terms of enhanced test capabilities or replacement of existing ones. It also describes any known limitations or constraints that may affect the baseline, i.e., non-project technological development or efforts, share funding, test resource availability, etc.

OBJECTIVES AND THRESHOLDS

The key technical performance, schedule, and cost elements for the project are identified in this section. The original and current anticipated value for each element is identified. Where applicable, both objectives and thresholds values should be shown for each element. If elements differ for Phase I and Phase II sufficient data must be included to support the deviations. Technical performance, schedule, and cost element objectives and thresholds are defined and tracked independently of each other. These are defined as follows:

Technical Performance. These are key technical performance parameters (or characteristics) that are definable and can be tracked to the Test Capability Requirements Document (TCRD), the TPD and/or the PMP. This information should be presented in the following format:

Performance	Original Value		Change		Current Value	
	Objective	Threshold	Objective	Threshold	Objective	Threshold
Parameter X						
Parameter Y						
Parameter Z						

Schedule. This section will include key milestones as stated in the TPD/PMP milestones, CTEIP

funding profiles or other project management documents. The information should be presented *in* the following format:

	Original Schedule	Change	Current Schedule
Milestone X			
Milestone Y			
Milestone Z			

COST

This section provides a breakdown of the funding profiles provided in the TPD. Two different cost breakdowns are required. The first breakdown provides the costs by function (e.g. development, support, etc.) and the second by major component (e.g. for the Aerial Cable - cable, target, equipment, etc.). In the second breakdown, for projects like ISTF with multiple subprojects, a breakdown of each subproject into major components should be provided. For the Functional Breakdown the total for each FY should equate to the funding profiles in the appropriate TPD. For the Major Component Breakdown the total should equate to the sum of the phase 1 and 2 development costs.

The cost section should also address any changes to the life cycle support costs addressed in the Life Cycle Support Plan.

Functional Breakdown

Original	FY1	FY2	FY3	FY4	FY5	Total
Developmental Contract						
EMD Contract						
Support Contract						
Program Office Support						
Other DoD Support						
Other						
Total						

Current	FY1	FY2	FY3	FY4	FY5	Total
Developmental Contract						
EMD Contract						
Support Contract						
Program Office Support						
Other DoD Support						
Other						
Total						

Major Component Breakdown

	Original Estimate	Current Estimate	Change
Component X			
Component Y			
Component Z			
Total			

EXIT CRITERIA

Exit criteria for CTEIP projects are defined for transitioning from Phase I to Phase II and finally to IOC/FOC. These criteria are generally stated in the TPD.

APPENDIX I

PROJECT DIRECTOR MONTHLY REPORT FORMAT

The Activity/Project Monthly Report is due to OSD on the 20th of each month. The report includes two major sections. The top section details the funds status for each fiscal year's funds received for the program. The funding should begin with the first year this project received CTEIP funds, and identify the funds in each of the execution columns of the report. The second section request information on the current status of the project. This would include major accomplishments/milestones during the preceding month; upcoming events scheduled in the current and following two months; and a brief description of any technical, schedule, or funding problems.

To assure consistency in CTEIP financial reporting the definitions below should be used in completing this report.

Obligations. The amount of an order placed, contract awarded, service rendered, or other transaction that legally encumbers a specified amount of an appropriation or fund for expenditures.

Accrual (Unpaid Expenditures). Cost incurred during a given period representing liabilities (amounts due and payable)for goods and services received, other assets acquired and performance accepted, prior to payment being made.

Disbursement (Paid Expenditures). Charges against available funds representing actual payment as evidenced by vouchers, claims, or other documents approved by competent authority.

Expenditures. Total of accrual and disbursement.

The format beginning on the following page should be used when submitting the Monthly Report:

CTEIP PROJECT DIRECTOR REPORT

FOR MONTH OF _____

PROJECT NAME: _____

PROJECT NUMBER: _____

FUNDS CITATION NUMBER: _____

FISCAL YEAR	FUNDS RECEIVED	FUNDS OBLIGATED	FUNDS ACCRUED	FUNDS DISBURSED	FUNDS EXPENDED Accr+Disb

MONTHLY ACTIVITIES: Provide a summary description of activities, technical status, test results, etc.

MAJOR ACCOMPLISHMENTS: Include contract awards, milestone achievements, technical successes, etc.

UPCOMING EVENTS: Include for current and following two months all scheduled major accomplishments, milestones, significant meetings, planned contract awards, etc.

PROBLEMS: Include description of any technical, schedule and/or funding problems.

FINANCIAL EXECUTION: Include an explanation year if this month's obligations and or expenditures levels deviate more than 10 percent from the forecasts of planned obligations and expenditures for this period..

ACTIONS/DECISIONS REQUIRED: Include requests for actions/decisions and indicate name/organization that will provide the required action/resolution/decision.

PROJECT DIRECTOR _____ **TELEPHONE:** _____

FINANCIAL MANAGER: _____ **TELEPHONE:** _____

APPENDIX J

PROJECT FINAL REPORT FORMAT

A final report is required for all CTEIP JIM projects and all Major Subprojects within REP (funded at \$1 million per year or \$5 million over the life of the project) at the completion of CTEIP funding. The last TPD issued to the project or REP subproject will contain a requirement to develop and submit a final report. The report, when completed, is to be forwarded via the Project Director's chain of command to the CTEIP Program Manager at OSD. The report should contain at a minimum information on the following topics. Additional items of interest can be contained in the report, based on the nature of the project.

1. **COVER PAGE:** This page is to include the basic information contained on the project's latest TPD to include the project name, the TPD number, the time period of the project (beginning date and ending date). Also, the date of the final report, the functional area, the project's number, the resource manager, and the project director should also be included.
2. **EXECUTIVE SUMMARY:** This section should be no more than a single page depicting the highlights of the project. It should state the original Need for establishing the project, the final capability/product and how it differs from the original Solution (more or less capability), and the driving forces for the change. The summary should identify the cost and schedule for the project and how it changed over the duration of the project. Also, how the capability is being transitioned into the test community should be outlined.
3. **PROJECT HISTORY AND SCHEDULE:** This section should provide a concise but complete chronological list of the major events of the project. These would include technical delays, requirements changes, schedule slippage's, reprogramming actions, system and subsystem integration and testing, as well as other significant successes and failures in reaching the final capability. This section should also provide a review of the schedule from the original to the final for each of the major milestones. The reasons for any slippage should be provided.
4. **PROJECT FUNDING:** This section should provide a review of the original estimate for project funding and the actual received by fiscal year. The section should state the reasons for the differences.
5. **TECHNICAL RISKS:** This section should provide a review of the technical aspects of the project by the major components. It should include how and when the risks were identified, the nature of the risk, and how the issues were resolved.
6. **PROJECT IMPLEMENTATION:** This section should provide detail on the basic implementation of the resource into the test community, including where the resource/asset will be located and an current estimate of the annual operating cost. It should identify any MOUs between the services, and provide points of contact for future follow-up.

7. **LESSONS LEARNED:** This section should record any lessons learned in the development, management and implementation of this project.
8. **BENEFITS.** This section should provide a description of the test benefits that the project provides to the test and acquisition communities. To the maximum extent possible, these benefits should be quantified in terms of cost avoidances, time saved, test efficiencies, etc.
9. **APPENDIX:** Include any material that is deemed important to the full understanding of the project and its development and operation.

APPENDIX K

CTEIP ANNUAL MID-YEAR REVIEW BRIEFING FORMAT

This appendix provides a description of the content and a sample briefing of the important project functions that are addressed at the annual review. The review is to be presented in viewgraphs, each chart formatted for screen viewing at a distance of 30 feet. A viewgraph format for the CTEIP Annual Program Review is included as a guide. In addition, all presentation materials should be forwarded to the CTEIP PEM in electronic media to arrive not later than 7 days prior to the start of the Annual Program Review. At the Mid-Year Review, viewgraphs may be projected either electronically or via overhead projector. Twenty hard copies of the viewgraphs are to be available for distribution to the attendees.

The Project Directors may include any additional information needed to present a clear description of their project, accomplishments, problems, decisions needed, etc.

TTD&D and REP projects should summarize their information into the following format and organization for the project level depiction, and use a similar format, tailored as necessary, for the larger subprojects (funded at greater than \$1 million per year or \$5 million over the life of the project).

1. COVER PAGE

The cover page will include

- a. Project name
- b. Project number
- c. Service TERC Member
- d. Project Director/telephone and fax number/office symbol.

2. OUTLINE CHART

3. PROJECT DESCRIPTION

A concise project description including T&E shortfalls and the proposed technical solution. Include a current picture or graphic of the project.

4. VALIDATION OF PROJECT NEED

Confirm continued need to satisfy T&E shortfall and list of users. Discuss any changes in validated need and whether these affect documented requirements contained in approved documentation such as the TCRD, TCBA, Project Baseline, etc.

5. TECHNICAL STATUS

Describe current status and an assessment of prior work in the area as well as deviations from the proposed technical approach. Include risk assessment, alternative solution, and project impacts to any significant deviation.

6. PROJECT FUNDING

Show funding status per the attached format. The Original Estimate is the estimated funding when the project was initiated. Current Approved funding is the funding profile contained in the current TPD. Required Funding is the Project Director's current best estimate needed to complete the project with the current technical content and best estimated schedule. This estimate may not agree with the Current Approved budget. The Delta line is the difference between the Current Approved budget and the Required Funds. Use negative numbers to indicate a shortfall. Explain the shortfalls and potential alternatives including a zero growth option. Funding sources other than CTEIP should be shown.

7. CURRENT YEAR OBLIGATION CHART

Show the planned and actual obligations for the current year CTEIP funding. In the ACTUAL/REV line, show most current actual data to date and the current/revised plan for the remainder of the year.

8. PRIOR YEAR OBLIGATION CHART

Show the obligation status of the prior fiscal year funding in a format similar to that used for the current year status. In the ACTUAL/REV line, show the most current actual data and the current/revised plan for the remainder of the year. Explain deviations from the prior year's plan.

9. CURRENT YEAR EXPENDITURE CHART

Show the planned and actual expenditure status for the current fiscal year. Expenditure data should include accruals. In the ACTUAL/REV line show the most current actual data and the current/revised plan for the remainder of the year.

10. PRIOR YEAR EXPENDITURE CHART

Show the expenditure status for the prior fiscal year funding in a format similar to that used for the current year status. Expenditure data should include accruals. In the ACTUAL/REV line show the most current actual data and the current/revised plan for the remainder of the year. Expenditure chart should be to the same scale as the obligation chart. Explain deviations from the prior year's plan.

11. UNEXPENDED PRIOR YEAR FUNDS

In table format, list all prior years with unexpended funds showing total budget and expenditures to date. Provide a narrative of the expenditure schedule for these funds.

12. PROJECT MASTER SCHEDULE

Show the project's master schedule from initiation to completion using the format in the example. Indicate the beginning and end of an activity connected by a solid line. Use a dashed line from the original end of the activity to the new estimated end date to show slips or extensions of a task. Use solid symbols and/or lines to show completion and open symbols to indicate open items. Normally the schedule stub items should be the same from year to year. Explain additions to the schedule and deviations from the baseline schedule. Milestones must include IOC, FOC, and dates of transition to Service/Agency funding.

13. CONTRACT STATUS CHART

Identify current contractors (include contract dollar value and period of performance), discuss their contract performance to date, and identify any deviations from their planned work schedules that will impact project milestone dates and funding.

Identify plans for future contractor support. Provide information on the contracting process, contracting strategy, and key milestones.

14. MANAGEMENT CHART

Review current project management to include project office status, key personnel, support contractors, and other Service involvement/activities.

15. ORGANIZATION CHART

Identify and discuss any current or anticipated manpower deviations from proposed manpower plans or personnel changes affecting project performance or support to the project.

16. CRITICAL/KEY ISSUES CHART

Identify and discuss any problems, current or anticipated, that will affect the project. Include recommendations and a timetable for resolving problems. Identify the decisions that are required and who needs to make the decisions.

17. REVIEW SUMMARY CHART

Review key points of presentation focusing on actions needed to resolve key problems/issues critical to overall project performance.

The remaining pages of this Appendix provide a sample of an Annual Mid-Year Review project briefing. The format provided by this sample should be followed to the maximum extent possible.



CENTRAL T&E INVESTMENT PROGRAM REVIEW

- **PROJECT TITLE**
- **LEAD SERVICE**

**PROJECT DIRECTOR
OFFICE SYMBOL
TELEPHONE/FAX**



CENTRAL T&E INVESTMENT PROGRAM REVIEW

OUTLINE

- **Project / Validation**
- **Technical Status**
- **Funding Status**
- **Master Schedule**
- **Contract Status**
- **Management / Organization**
- **Critical/Key Issues**
- **Summary**



CENTRAL T&E INVESTMENT PROGRAM REVIEW PROJECT DESCRIPTION

- **T&E Shortfalls**
- **Project Description**
- **Project Validation**



CENTRAL T&E INVESTMENT PROGRAM REVIEW TECHNICAL STATUS

- **Technical Status**
- **Current Risks/Problems**
- **Proposed Solutions**
- **Project Impact**



CENTRAL T&E INVESTMENT PROGRAM REVIEW

[PROJECT NAME] FUNDING

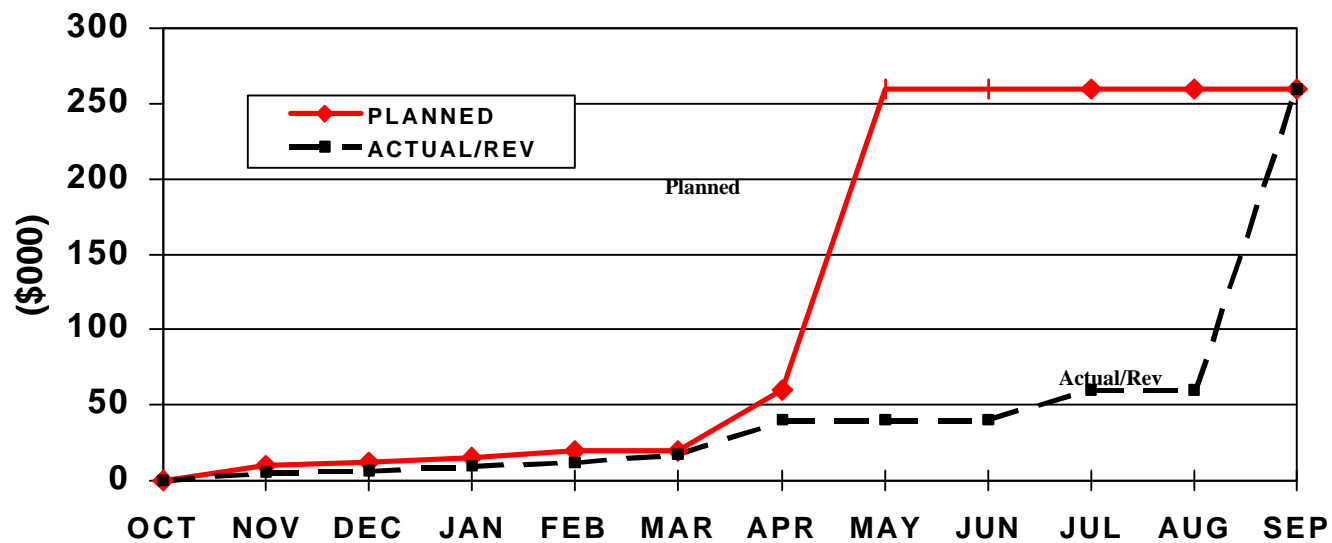
	PRIOR	FYXX-1	FYXX	FYXX+1	FYXX+2	...	FYXX+n	TOTAL
CTEIP FUNDING								
ORIGINAL ESTIMATE								
CURRENT APPROV								
REQUIRED FUNDS								
DELTA REQ								

OTHER FUNDING								
CURRENT APPROV								
REQUIRED FUNDS								
DELTA REQ								



CENTRAL T&E INVESTMENT PROGRAM REVIEW

FY XX OBLIGATION STATUS

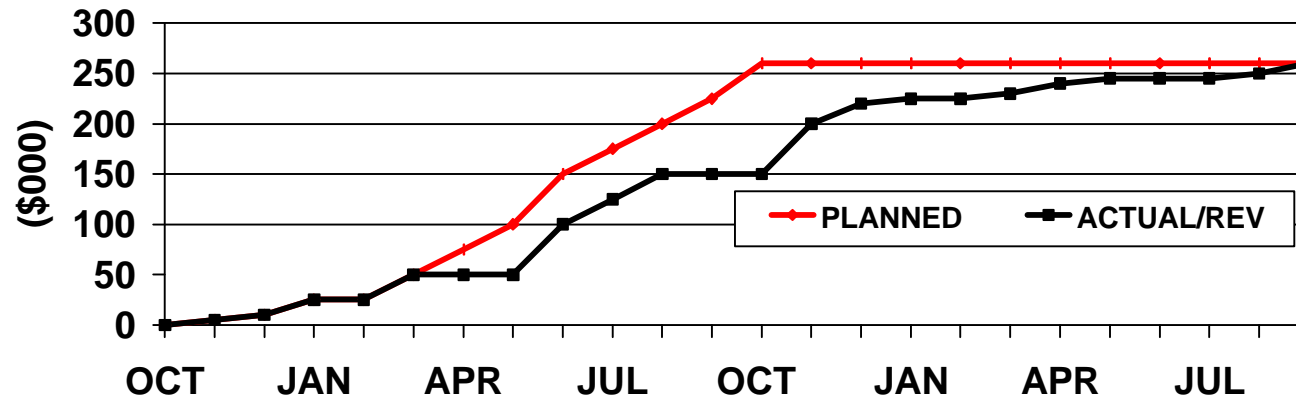


	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
PLANNED	0	10	12	15	20	20	60	260	260	260	260	260
ACTUAL/REV	0	5	7	10	12	18	40	40	40	60	60	260



CENTRAL T&E INVESTMENT PROGRAM REVIEW

FY XX-1 OBLIGATION STATUS



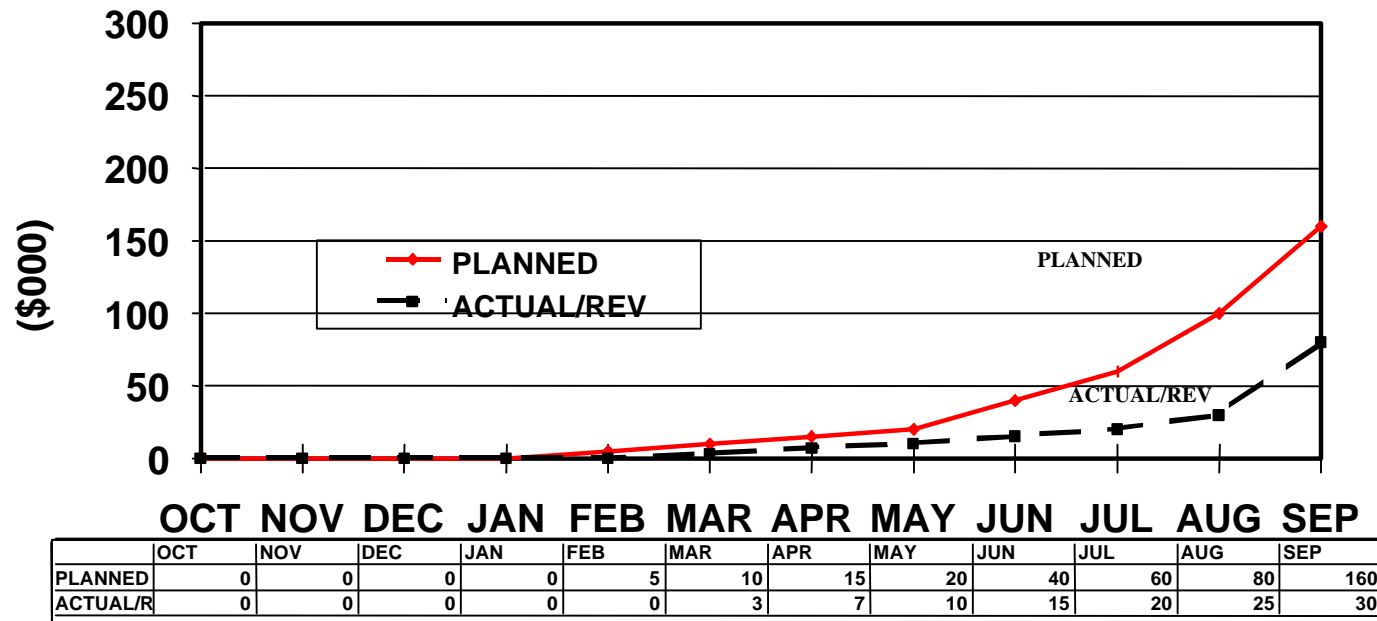
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
PLANNED	- 0	5	10	25	25	50	75	100	150	175	200	225
ACTUAL/R	0	5	10	25	25	50	50	50	100	125	150	150

OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
260	260	260	260	260	260	260	260	260	260	260	260
150	200	220	225	225	230	240	245	245	245	250	260



CENTRAL T&E INVESTMENT PROGRAM REVIEW

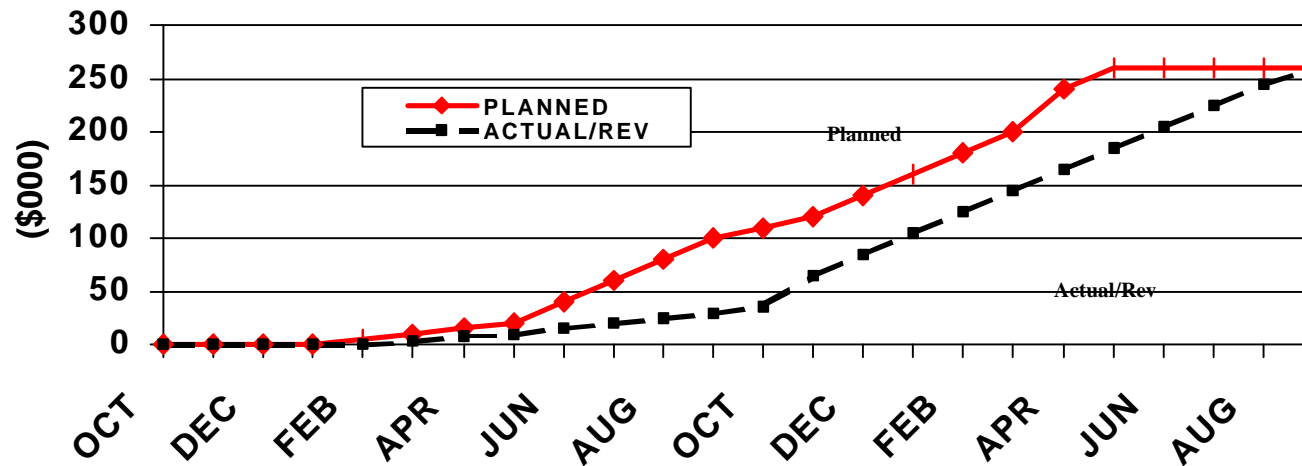
FY XX EXPENDITURE STATUS





CENTRAL T&E INVESTMENT PROGRAM REVIEW

FY XX-1 EXPENDITURE STATUS



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
PLANNED	0	0	0	0	5	10	15	20	40	60	80	100
ACTUAL/REV	0	0	0	0	0	3	7	10	15	20	25	30

OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
110	120	140	160	180	200	240	260	260	260	260	260
35	65	85	105	125	145	165	185	205	225	245	260



CENTRAL T&E INVESTMENT PROGRAM REVIEW UNEXPENDED PRIOR YEAR FUNDS

FY	Budget	Expended	Unexpended
FYXX-5			
FYXX-4			
FYXX-3			
FYXX-2			
FYXX-1			

*** Provide narrative on separate slide**



CENTRAL T&E INVESTMENT PROGRAM REVIEW MASTER SCHEDULE

	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
PHASE 1																				
CONCEPT DEV																				
REQUIREMENTS																				
TCBA																				
LIFE CYCLE																				
MOUs																				
PDR																				
PHASE 2																				
EMD																				
CONTRACT AW																				
CDR																				
INTEGRATION																				
IOC																				
FOC																				



CENTRAL T&E INVESTMENT PROGRAM REVIEW CONTRACT STATUS

- **Current Contracts (List Contractors)**
- **Contract Performance**
 - **Schedule Variance**
 - **Cost Variance**
 - **Disputes/Requirements for Prior Year Funds**
- **Future Support/Changes**



CENTRAL T&E INVESTMENT PROGRAM REVIEW ORGANIZATION

- **Project Office Status**
 - **Manpower**
 - **Facilities**
 - **Coordination**
- **Support Service**
- **Other Service Involvement/Activities**



CENTRAL T&E INVESTMENT PROGRAM REVIEW CRITICAL/KEY ISSUES

- **Current Problems**
- **Anticipated Problems**
- **Recommendations**



CENTRAL T&E INVESTMENT PROGRAM REVIEW REVIEW SUMMARY

- **Review**
 - **Funding**
 - **Schedule**
 - **Risks**
 - **Manpower**
 - **Contracting**

- **Issues/Decisions**

APPENDIX L

PROJECT MANAGEMENT REVIEWS (PMR) FORMAT

This appendix describes the content and format for the PMR. When needed, a PMR will be scheduled in order to focus on a specific project in sufficient depth to understand issues, alternatives, and potential management actions.

The PMR is a formal review of a project at a specific point in time. It is intended to bring all elements of a project—technical, cost, schedule, budget, and management—together such that the various interrelationships, risks, progress, and potential alternatives can be assessed and programmatic decisions can be made.

PMR Organization and Content.

The PMR will be presented by the Project Director and will normally be reviewed by the TERC with the CTEIP Program Element Manager in attendance or acting as the chairman. The core portion of the PMR is structured to present the requirements for the project, technical, schedule, cost/budget, contractual, and management aspects/functions in detail. Other elements will be included as necessary to present a complete status of the project, to define outstanding issues and problems, and delineate alternative courses of action as may be appropriate or required.

PMRs will normally be scheduled/requested approximately 60 days in advance of the expected presentations but may be requested on shorter notice in reaction to unexpected issues or changes.

The PMR should be sponsored to the TERC by the respective Service or Defense Agency representative. Copies of the presentation materials should be provided to the CTEIP Program Manager a minimum of 10 working days before the presentation so that they may be distributed to the TERC members as part of the read-ahead package for the meeting.

PMR Presentation Format.

The PMR presentation should use a similar format and style as defined for the CTEIP Mid-Year Execution Review at Appendix J of this guide. The PMR is a more in-depth review of a project than the Mid-Year Execution Review, and, therefore, more detail should be included in some areas of the presentation depending upon the instructions contained in the request for the PMR. A brief summary of the PMR presentation is as follows:

- a. A brief description of the project. Discuss the capability that is being developed and the requirement to which it responds. Include required need dates.
- b. Review the current requirements for the project. Provide initial requirements and discuss changes to include who requested the change and when. Discuss the impacts

to the project driven by changed requirements and problems, issues, and risks in meeting the requirements.

- c. A technical section should be provided with sufficient detail to ensure the reviewers gain a management level understanding of the project. Discuss innovations that are required to meet the requirements. Outline progress and current risks, issues, or problems.
- d. A master project schedule should be presented and compared with the original baseline schedule. Identify slips, accelerations, potential problem areas. Show key milestones such as contract decision points, documentation submissions, design reviews, major tests, IOC, FOC, etc. The schedule should be in sufficient detail to provide an understanding of the major steps that the project comprises and what has been completed to date. The format shown for the Mid-Year Execution Review is to be used, but with sufficient detail added, as required, to depict issues or decisions to be discussed in the PMR.
- e. Cost and budget presentations should be in the formats specified for the Mid-Year Execution Review with additional detail added to clearly depict impacts of the problems or issues discussed in the PMR. The current budget, compared with the original baseline budget, together with obligation and expenditure data for the current and all previous budget years is a mandatory briefing item.
- f. A contractual portion should cover current contacts (contractor, value, effective dates); provide a performance assessment (red, yellow, green); and outline key milestones, decisions, and plans. Source selection sensitive information is not requested and should not be presented.
- g. A management section should cover the status of key personnel, planned key milestone preparations, risk management, issues and problem areas, and assistance or decisions needed. Project successes should be included.
- h. Issues, problems, and any assistance being requested should be covered in sufficient detail to ensure that reviewers can understand and appreciate them. Impacts on cost, schedule, technical, and performance should be presented, as well as options and alternatives. A recommended position or solution should be provided.

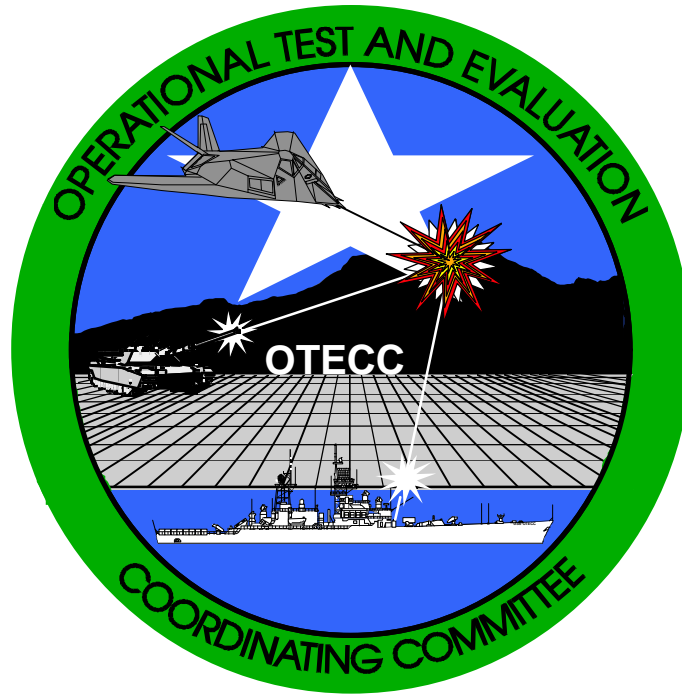
Not all of the information above may be actually presented in the PMR due to time constraints or the nature of the problem/issue driving the review. However, for completeness in describing the project at a specific point in time, all of the information requested should be included in the presentation package.

APPENDIX M

RESOURCE ENHANCEMENT PROJECT PLANNING AND EXECUTION GUIDE

The Resource Enhancement Project Planning and Execution Guide is included in its original format and pagination as Enclosure 1 to this Appendix.

RESOURCE ENHANCEMENT PROJECT



PLANNING AND EXECUTION GUIDE

Revision 1

16 December 1998

RESOURCE ENHANCEMENT PROJECT
PLANNING AND EXECUTION GUIDE
REVISION 1

Prepared by

OPERATIONAL TEST AND EVALUATION COORDINATING COMMITTEE
(OTECC) WORKING GROUP

SUBMITTED BY:

/s/

Larry Nichols
Chairman, OTECC Working Group

APPROVED BY:

/s/

John F. Gehrig
Office of the Director, OT&E
(Resources and Administration)
OTECC Chairman

December 16, 1998

Date Approved

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Chairman of the OTECC.

**RESOURCE ENHANCEMENT PROJECT
PLANNING AND EXECUTION GUIDE
REVISION 1**

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PURPOSE

This Planning and Execution Guide (PEG) provides an overview of the Resource Enhancement Project (REP), its objectives and structure. It describes the management responsibilities of the Department of Defense (DoD) Operational Test and Evaluation Coordinating Committee (OTECC) and its subordinate Working Group (WG). These bodies are responsible for the planning and acquisition of operational test and evaluation (OT&E) resources under the REP element of the Central Test and Evaluation Investment Program (CTEIP). The OTECC oversees the management of the annual REP budget to include the timely review and consideration of shortfalls emerging from operational testing generated by a near term shift in test related requirements, budgets, or schedules.

This PEG addresses the management of the REP as one of DoD's CTEIP projects. It addresses the procedures from the inception of the REP subprojects through the release of funding by the OUSD(A&T)/DTSE&E and subsequent project management and execution. It provides guidelines on the preparation and submission of REP documentation, to include: Quad Chart, Nomination Assessment Report, Obligation and Expenditure Plan, Project Management Plan and Directive (PMP&D), Test Package Directive (TDP), Subproject Management Plan (SMP), Monthly Report, etc.

Information on the individual REP subprojects for each fiscal year is contained in the PMP&D for the fiscal year of execution. The PMP&D is published annually by the OTECC while this PEG is updated on an as needed basis. The PMP&D provides definitive direction to the various managing and executing agencies involved in the REP, documents the funded REP subprojects, and details the planned financial and technical execution plans for each individual subproject. Collectively this PEG and the PMP&D detail the REP for each fiscal year of execution.

This Guide will be reviewed by the OTECC WG on an annual basis. Updates, amendments, or revisions will be as directed by the OTECC. All changes will be coordinated with the OTECC and approved by the OTECC Chairman.

SECTION 1. INTRODUCTION

1.1 **BACKGROUND**

The centrally managed and funded Central Test and Evaluation Investment Program (CTEIP) implements the multi-service part of the overall Department of Defense (DoD) Test and Evaluation (T&E) investment strategy and provides for decentralized execution of individually approved projects by the Services/Defense Agencies. The CTEIP funds high-priority, multi-service T&E requirements. By funding common solutions to similar test needs for the Services, and focusing on integrated management of test resources, the CTEIP also minimizes unwarranted duplication of test resources.

One element of the CTEIP is the Resource Enhancement Project (REP). The 1990 Congressional Defense Appropriations language directed that the funds to support REP be included in the CTEIP Program Element (PE) 0604940D under the fiscal sponsorship of the Deputy Director, Defense Research and Engineering (Test and Evaluation) (DDDR&E (T&E)) starting in fiscal year 1991. A 1992 organizational realignment changed DDDR&E(T&E) to the Director, Test and Evaluation (DT&E), Office of the Under Secretary of Defense (Acquisition) (OUSD(A)). A 1994 organizational change established the Office of the Director, Test, Systems Engineering and Evaluation (DTSE&E), Office of the Under Secretary of Defense (Acquisition and Technology) (OUSD(A&T)) as sponsor. Under the auspices of the REP, DoD funds operational test (OT) resource requirements whose non-availability for scheduled OTs could introduce high risk in the development and evaluation of new weapon systems and system upgrades. REP funds projects to meet operational test and evaluation (OT&E) requirements that are near term (usually three years or less) and high priority in nature.

1.2 **OBJECTIVES OF THE RESOURCE ENHANCEMENT PROJECT (REP)**

The overall objective of the REP is to ensure, through coordination by the DoD Operational Test and Evaluation Coordinating Committee (OTECC), that scheduled Service and DoD Agency programs are provided the resources necessary to test in the most realistic operational environment possible.

REP funds near term OT resource requirements (usually three years or less) and high priority in nature that were not programmed by the program office or covered by the Program Objective Memorandum (POM) cycle submission (due to changes in test requirements, scope of testing, etc.). The non-availability of these OT resources could introduce high risk in the development and evaluation of new weapon systems and system upgrades. REP provides a rapid response to unforeseen OT&E issues, such as emergent test requirements, new threat developments, and new technologies that may alter/impact test schedules and require the use of test resources that were not planned. Through REP, subject matter experts work together to discuss and determine the best and most affordable means to resolve OT shortfalls and limitations, to prevent unwarranted duplication of capabilities/assets, and to establish cooperative efforts to enhance efficiency or identify opportunities for joint development projects.

1.3 OPERATIONAL TEST AND EVALUATION COORDINATING COMMITTEE (OTECC)

The OTECC, as a standing DoD coordinating committee for the REP, makes Service recommendations to the Director, Operational Test and Evaluation (DOT&E) on all matters related to acquisition of OT&E resources funded by the Office of the Secretary of Defense (OSD). As a "purple suit" entity, the OTECC reviews and analyzes budgetary and programmatic plans of Service identified OT&E resource shortfalls. The OTECC will determine whether REP funding will be used to satisfy these shortfalls. The OTECC Principals will include an Executive Board and standing members. The Executive Board will have voting rights.

The Executive Board will include:

- (a) OTECC Chairman: Deputy Director Operational Test and Evaluation (Resources and Administration) or his designee,
 - (b) Principal member from the Army,
 - (c) Principal member from the Navy,
 - (d) Principal member from the Air Force,
 - (e) Principal member from the Marine Corps,
 - (f) Principal member from OUSD(A&T)/DTSE&E/Resources and Ranges, and
 - (g) Principal member from the Joint Interoperability Test Command (JITC).
- (NOTE: Each executive board member will designate an Alternate.)

Standing members will include:

- (a) Principal member from the Defense Intelligence Agency (DIA) and
- (b) Principal member from the Ballistic Missile Defense Organization (BMDO).

The OTECC is administratively supported by the Working Group (WG) with membership from the Service Operational Test Agencies (OTAs) and DoD Agencies (DIA, BMDO, and JITC) involved in the conduct of operational testing, and an Administrative Coordinator, appointed by the OTECC Chairman. The Administrative Coordinator (OTECC WG Chairman) is an advisory member of the OTECC, reporting directly to the OTECC Chairman, and chairs the WG. REP financial administrative support is centralized under the direction of the WG Chairman with designated points of contact within each Service/Agency. The management responsibility of the OTECC, OTECC WG, and OTECC WG chairman is discussed in paragraph 2.1.

1.4 REP SUBPROJECT FUNDING AND APPROVAL

Approval of REP subprojects is provided by the Director, OT&E with the recommendation of the OTECC. Guidance for REP investments is provided with the advice and counsel of the Defense Test and Training Steering Group (DTTSG). The DTTSG is an OSD-level organization that has the full participation and coordination of the Services and Defense Agencies. Central guidance and direction come from OSD. The DTTSG is the senior-level forum for DoD components to address test and evaluation resource matters. In this forum, Service, Agency, and OSD T&E resource planning responsibilities are integrated into a corporate planning process. The DTTSG Chairman is the final approval authority for determining the level of REP funding under CTEIP.

1.5 RELATIONSHIP OF REP WITH CTEIP

While REP is funded as a CTEIP project, REP functions are distinct from those of other CTEIP projects. REP funding levels are established by the DTTSG. The OUSD(A&T)/DTSE&E funds the REP to the specified level and performs all necessary OSD level financial tracking functions. Overall oversight of the REP is provided by the OTECC.

SECTION 2. MANAGEMENT APPROACH

2.1 MANAGEMENT RESPONSIBILITY

The OTECC will provide overall oversight to REP and will strive to accomplish the following:

- Prioritize Service/Agency near term OT&E resource requirements to solve OT shortfalls and limitations involving instrumentation, targets, threat simulators, threat systems (blue, gray, red), modeling and simulation
(Near term OT&E resource requirements" are defined as resource requirements needed to support an OT&E scheduled for execution within three years of subproject start)
- Ensure Service and DoD Agency coordination:
 - for planning, programming, and budgeting of all REP candidate subprojects
 - of candidate REP threat related subprojects with the CROSSBOW Committee.
- Provide Service and DoD Agency review of all candidate subprojects to prevent unwarranted duplication
- Provide a forum for inter-service coordination of OT and evaluation issues for the purpose of establishing cooperative efforts or investments.

The OTECC will perform the following functions that are included in its charter:

- Identify OT&E test resource issues and develop solutions
- Prioritize and recommend funding for candidate subprojects addressing OT&E test capability shortfalls
- Formulate initiatives that enhance efficiency and effectiveness of OT&E test capability management; such initiatives include test resource analysis and planning
- Enhance coordination among all Services and DoD Agencies on OT&E test capability matters
- Formulate REP plans, programs, and budgets; develop and maintain a REP management information system and programmatic documentation
- Report execution year performance of the REP subprojects.

The OTECC WG will assist in carrying out OTECC initiatives and responsibilities and will provide Service/Agency perspectives on working group matters. The OTECC WG will include a Chairman appointed by the OTECC Chairman and a primary and alternate representative from the Army, Navy, Marine Corps, Air Force, and JITC OTAs, BMDO, and DIA. All OTECC WG members representing an OTA will have voting rights.

The OTECC and OTECC WG will liaison with other test resource entities to preclude unwarranted duplication of effort and to enhance efficiency.

The OTECC WG will:

- Look at scheduled OTs for test resource shortfalls; identify potential solutions; bring forward the solutions as proposed subprojects for consideration to the OTECC
- Through Test Resource Analysis and Planning (TRAP) efforts, properly document and justify all REP requirements and identify the existence of any additional future test shortfalls which may benefit from the development or acquisition of each proposed REP subproject
- Prioritize subprojects for respective fiscal year (FY) funding; submit a recommended prioritization list (updated in timely fashion for all subproject adjustments) for all REP candidates to the OTECC for consideration
- Establish firm completion dates for all REP subprojects
- Ensure that the operation and maintenance (O&M) levels have been identified and discussed with the gaining organization
- Review the funding on each subproject as measured against the current Obligation and Expenditure Plan (O&E Plan) for the fiscal year of interest and report status to the OTECC on a monthly basis
- Challenge all prospective subprojects' abilities to deliver on time and within budget the deliverables identified in submission documents (REP Quad Chart, Nomination Assessment Report (NAR), O&E Plan and any supporting statements, documents, or briefings)
- Provide the OTECC WG Chairman with all data and documentation necessary to serve as the liaison to the OTECC Principals, to include timely updates of all required subproject documentation
- Oversee on behalf of the Service/Agency OTAs and all other involved offices the execution of all subprojects assigned to the Service/Agency to include the gathering of obligation and expenditure data, forwarding of execution problem reports, and the initiation and follow through of reprogramming actions arising from these projects
- Represent the interests and approval authority of the Service/Agency OTAs in determining the REP candidates to be nominated and the relative prioritization of the candidates
- Coordinate with other OTECC WG members, subproject managers and the OTECC WG Chairman to identify opportunities for joint development projects and bring those candidates to the attention of the full OTECC WG for consideration where practical.

The OTECC WG Chairman will perform the following activities in support of the REP:

- Administer and direct the operations of the OTECC WG.
- Attend OTECC Principals meetings and Test and Evaluation Resource Committee (TERC)/TERC WG meetings; coordinate the schedule for OTECC Principals meetings.
- Ensure that necessary documentation (to include agenda for all OTECC and OTECC WG meetings) are distributed in advance of scheduled meetings.
- Coordinate directly with the Principals and OTECC WG members, as necessary, to provide updated information on REP, to perform routine coordination, or to obtain short-term or detailed guidance related to outstanding OTECC WG actions.
- As directed by the OTECC Chairman, establish and oversee special project subcommittees and their activities, as necessary, to examine and resolve specific issues.
- Ensure timely preparation, coordination, approval, and dissemination of OTECC reports to include the REP Project Management Plan and Directive (PMP&D), Subproject Management Plans (SMPs), and all meeting minutes inclusive of select REP subcommittee minutes
- Prepare, for OTECC Chairman approval, the Test Package Directives (TPDs) for REP subprojects meeting the CTEIP \$1M/5M threshold (REP subproject funded at \$1M or more in any execution year or \$5M over the duration of the subproject).
- Prepare and coordinate with OTECC WG an End of the Year Report, input to CTEIP Annual Report, and input to DOT&E Annual Report, as required.
- Initiate, on an as needed basis, any updates, amendments or revisions to this PEG directed by the OTECC. Ensure changes are properly coordinated and approved.
- Ensure timely preparation and submission of REP plans, programs and budget documentation.
- Prepare, from input provided by the OTECC WG members, a consolidated monthly status and financial report and forward it to DOT&E, DTSE&E, OTECC, and the designated OSD financial manager.
- Prepare, on an annual basis, a self assessment report based on the monthly status and financial reports provided by the OTECC WG members.
- Plan, schedule, and chair the OTECC WG meetings.
- Maintain a management information system to track/monitor REP activities.
- Manage an independent budget line for contractual and administrative support as necessary and serve as the OTECC and OTECC WG oversight for all REP related activities funded by that budget line.

2.2 PROJECT MANAGEMENT INTERFACE

Normal communications from the DTTSG concerning REP subprojects flow

through the OTECC, to the OTECC WG members, and down the respective chains of command to the subproject managers in the field. Likewise, communications will flow up the chains of command to the OTECC.

Figure 1 provides an overview of the REP management process. As shown in this figure, Test Resource, Analysis and Planning (TRAP) plays a major role in the REP management process. Through this process, near term OT&E resource needs are nominated for inclusion in the REP. Nominations may originate with the Service/Agency OTAs (as represented on the OTECC WG), the OTECC Principals, or other Defense agencies. The OTECC WG analyzes the nominated subprojects and makes recommendations to the OTECC Principals. Based upon OTECC WG inputs, the OTECC Principals determine which subprojects are to be included in the REP for a given fiscal year, as well as the level of REP funding for each individual REP subproject.

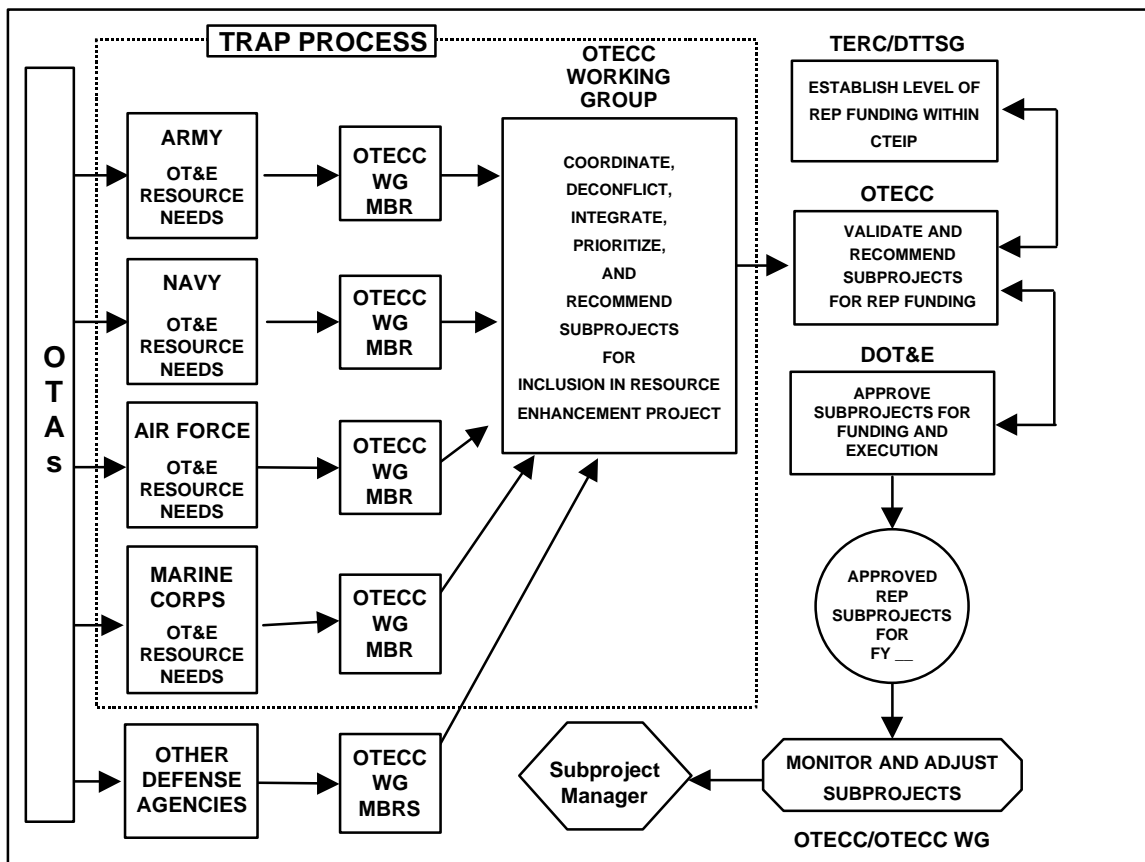


Figure 1. Overview of REP Management Process

The OTECC recommended list of REP subprojects for a given fiscal year is submitted to the DOT&E for approval. The DOT&E approved list of subprojects becomes the approved REP for a given fiscal year. The OSD/DTSE&E CTEIP PM releases funds to the designated REP financial manager who distributes the resources based on the approved list. The REP subprojects identification and approval schedule is depicted in Section 3.2, Table 1.

The OTECC WG member is responsible for monitoring the technical and financial aspects of his/her Service's/Agency's REP subprojects.

2.3 REP SUBPROJECT MANAGEMENT

The day-to-day management of individual REP subprojects is assigned to a Service or Defense Agency field level organization, which identifies a subproject manager, an alternate, and a financial point of contact. The designated subproject manager will ensure the OTECC WG is periodically appraised of subproject technical and financial status in accordance with the guidelines set forth in this guide.

In-process management of individual REP subprojects may be assigned to a field activity for execution. For all REP subprojects, a subproject manager is identified by the Service/Agency to execute his/her specific subproject within the context of the annual REP PMP&D. The responsibility and authority of the subproject manager is determined by the acquisition directives of the Service/Defense Agency appointing the subproject manager, and as appropriate, by the overall guidance contained in this guide, the annual REP PMP&D, the TPD and the approved SMP. The subproject manager will perform the following activities:

- For subprojects meeting the CTEIP \$1M/5M threshold, prepare and submit a SMP within 60 days from approval of TPD.
- Report any breach or projected breach/deviations to the thresholds that will impact costs, funding, schedules, performance, and requirements. Submit an updated/revised Quad Chart and an O&E Plan within 30 days of reportable breach or program adjustment.
- Conduct subproject reviews in accordance with Section 4.5.
- Submit monthly status report and other financial, technical, and programmatic reports described in Sections 4.3.4, 4.3.5, 4.4, 4.5, 4.6, and 4.9 of this PEG. Notify the OTECC WG Chairman, through OTECC WG member, of any funding issues that may cause work perturbations (e.g., contract stop work directives) 60 days in advance of occurrence.
- Notify the OTECC before letting major contract awards (\$1M or over) to ensure the contract is within the funding profile. (This could be done through electronic mail, correspondence, or telephone call.)
- Provide list of documents containing results of studies, reviews, surveys, etc., conducted in response to OTECC Chairman's direction.

- Maintain a close coordination/interface with the prime customer(s)/user(s) for the capabilities to be acquired by the subproject to ensure timely understanding of needs, changes in requirements, etc.

All required reports and information will be submitted to the OTECC WG Chairman through the OTECC WG member.

2.4 REP/CROSSBOW COORDINATION ON REP THREAT RELATED SUBPROJECTS

All REP threat related subprojects covered under the purview of the CROSSBOW charter will be approved by the respective Service/Agency OTA and coordinated with the CROSSBOW Committee. Coordination with the CROSSBOW Committee is the responsibility of the appropriate OTECC WG member through the respective CROSSBOW Committee representative and will be initiated prior to the subproject being submitted and nominated to the OTECC as a candidate for REP funding consideration. Coordination with the CROSSBOW Committee is required to determine if any unnecessary duplicative efforts or capabilities are being developed and whether there are DTSE&E validation processes that must be followed.

The request to the CROSSBOW Committee will comply with the Service/Agency particular documentation requirements and include a request for: identification of lead Service; a determination as to whether there are any duplicative developments or capabilities; and a determination as to whether the DTSE&E validation process must be followed. The request should include a REP quad chart and an expanded subproject description detailing the threat capability to be simulated/emulated along with identification of the source of the requirement. A briefing to the CROSSBOW Committee may be required to further describe and discuss the proposed subproject.

The result of this coordination will be documented by a letter signed by the CROSSBOW Chairman which will address the duplication question, the need for CROSSBOW validation and whether a formal memorandum of understanding or similar instrument needs to be executed, and the basis for continuing with the subproject when duplication is warranted. The CROSSBOW Committee's response must be summarized and referenced in the subproject NAR prepared as part of the candidate subproject submission.

The CROSSBOW Committee Chairman or his/her representative will be invited to attend OTECC WG meetings or briefings when the proposed subprojects are being discussed and reviewed. The CROSSBOW Committee Chairman will be provided with a copy of the REP PMP&D for each fiscal year and all OTECC/OTECC WG meeting minutes.

SECTION 3. SUBPROJECT NOMINATION AND SELECTION

3.1 GENERAL

OT&E planning starts early in the weapon system acquisition cycle. For example, the preliminary Test and Evaluation Master Plans (TEMPs) for Major Defense Acquisition Programs (MDAP), Acquisition Category (ACAT) ID and IC, are submitted to OSD prior to the Defense Acquisition Board (or Committee) Milestone I review. These preliminary TEMPs will have estimated key OT&E resource requirements to the degree known. As system acquisition progresses, preliminary test resource requirements are reassessed and refined. Subsequent TEMP updates reflect changed system concepts, resource requirements, and/or threat assessments. Resource shortfalls that identify significant OT limitations should be discussed in the TEMP or other test planning documentation with planned corrective action outlined, as per DoD 5000.2-R.

Subprojects submitted for OTECC consideration as REP candidates will typically be supporting scheduled OT&E efforts for which planning is reflected in an approved TEMP or other approved test planning documentation. Periodically, DOT&E adds OT requirements to the Service's OT&E programs. Resources to support these requirements are normally not provided. The resultant shortfall is a prime candidate for REP funding consideration. These shortfalls should also be reflected in the Services' TRAP efforts.

The OTECC will support the DoD OT&E process through identification of OT test asset shortfalls that pertain to specific (planned) OTs. In support of that activity, the OTECC WG will undertake a formalized review and analysis of identified REP nominations on an annual basis.

This section discusses the TRAP process, the subproject selection process which includes analyses of subproject information and prioritization, criteria and guidelines, and the development of the proposed REP recommendation list for a given fiscal year.

3.2 REP SUBPROJECTS IDENTIFICATION AND APPROVAL SCHEDULE

The timeline for the identification and approval of the REP subprojects for a given fiscal year funding is depicted in Table 1:

ACTIVITIES	1QTR			2QTR			3QTR			4QTR			1QTR →			
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J
Validate Critical OT Shortfalls	△					△										
Submission of Quad Charts, NAR, O&E (Continuing Subprojects)							△									
Submission of Quad Charts, NAR, O&E (New Starts)								△								
Review Documentation - WG							△	△								
Brief Proposed Subprojects - WG								△								
Acceptance of Subprojects - WG								△								
Review and Prioritize Subprojects - Service / Agencies									△	△						
Prioritize and Submit to OTECC Principals - WG											△					
Validate Priority / Identify / Submit Recommended List of Subprojects to Receive Funds to DOT&E - Principals												△				
DOT&E Review / Approval												△				
Brief DTTSG												△				
Budget Approval / Release of REP Funds													△		◇	
Issuance of REP TPD - CTEIP PM													◇			
Prepare REP PMP&D / Issue TPDs to Subprojects (funded at 1M or 5M over life of project)- OTECC													△	◇		
Prepare/Submit/Approve SMPs - WG														△		◇
Oversee Subproject Execution - WG													△			→

Table 1. Subproject Identification and Approval Schedule

3.3 TEST RESOURCE ANALYSIS AND PLANNING (TRAP) PROCESS

The TRAP process is used to identify, analyze, and develop potential solutions to eliminate or reduce OT&E shortfalls. The TRAP process includes the analysis of anticipated T&E resource shortfalls in scheduled OTs identified in TEMPs or test plans. Once the shortfalls are identified, potential solutions that reduce or eliminate a particular shortfall are examined. This examination may include survey of existing Service assets, other Service assets, foreign material sources, commercial market surveys, and new developmental concepts. Common test shortfalls and/or limitations over a range of programs are identified among the OTs scheduled by the Services and other DoD Agencies. Preliminary justifications, project schedules, budget estimates, and OTs to be supported are then prepared and evaluated for subproject nomination and consideration as candidates for REP funding.

3.4 SUBPROJECT NOMINATION/SELECTION PROCESS

Subprojects are submitted for REP funding consideration by the Services/Agencies on an annual basis according to the schedule outlined in Section 3.2. While the role of submitter is generally held by a single Service/Agency, a concerted effort is made by the OTECC WG to prioritize multi-service solutions above single Service/Agency solutions of equal merit. Additionally, the approaches selected by each Service/Agency are examined for possible coordinated acquisition and shared use of test resources with other Services/Agencies.

Nominations for REP funding will be initially screened by the respective OTECC WG member before they are submitted to the OTECC through the OTECC WG. Each proposed subproject is analyzed by the Service/Agency to determine if it can be executed with the funding requested, within the time projected and meet the performance and support the objectives identified as needed to satisfy the OT shortfall/limitation. The prioritized subproject candidates are submitted to the OTECC WG for consideration.

Each nomination will be briefed to the WG. Any questions/issues raised by the WG must be addressed/resolved prior to its acceptance. Each candidate should meet the criteria and conform to the guidelines provided in Sections 3.5, 3.6, 3.6.1, 3.6.2, and 3.7. The subproject must be accepted by the majority of the WG to be considered as candidate for REP funding.

A REP subproject Quad Chart, along with the NAR, O&E Plan, and the estimate of O&M support required (when applicable), will be developed by (or in concert with) the individual Service's OTA and submitted as part of the request for consideration for REP funding by their respective OTECC WG member. Incomplete or inadequate documents may serve as grounds for the rejection of a candidate.

The Quad Chart (as shown in Figure 2) is the key management document for the REP subproject. The principal individuals and organizations involved in the execution of the subproject, a detailed subproject description/constraints/impacts that establishes the criticality of the subproject, the OTs to be supported, milestones/schedule, sources of funding, and the funding stream are identified in the Quad Chart. The OTECC WG will use the REP Quad Chart to determine if proposed subprojects meet the requirements for REP approval and funding. Guidance for Quad Chart preparation is found in Appendix A.

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Figure 2. REP Quad Chart

The NAR (as shown in Figures 3a and 3b) documents the results of the analysis completed by the OTECC WG to determine if a proposed subproject meets the criteria for REP funding. The NAR is not a prioritization tool; however, the data will be considered in the OTECC final subproject rank-order decision. Guidance for NAR preparation is found in Appendix B.

Resource Enhancement Project FYXX Nomination Assessment Report																																			
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Funding Profile (\$M): <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: none;">Source:</td> <td style="border: none;">FYXX</td> <td style="border: none;">FYXX</td> <td style="border: none;">FYXX</td> <td style="border: none;">FYXX</td> <td style="border: none;">FYXX</td> <td style="border: none;">FYXX</td> <td style="border: none;">Total</td> </tr> <tr> <td style="border: 1px solid black; width: 25%; height: 15px;"></td> <td style="border: 1px solid black; width: 10%; height: 15px;"></td> <td style="border: 1px solid black; width: 10%; height: 15px;"></td> <td style="border: 1px solid black; width: 10%; height: 15px;"></td> <td style="border: 1px solid black; width: 10%; height: 15px;"></td> <td style="border: 1px solid black; width: 10%; height: 15px;"></td> <td style="border: 1px solid black; width: 10%; height: 15px;"></td> <td style="border: 1px solid black; width: 10%; height: 15px;"></td> </tr> <tr> <td style="border: 1px solid black; height: 15px;"></td> <td style="border: 1px solid black; height: 15px;"></td> <td style="border: 1px solid black; height: 15px;"></td> <td style="border: 1px solid black; height: 15px;"></td> <td style="border: 1px solid black; height: 15px;"></td> <td style="border: 1px solid black; height: 15px;"></td> <td style="border: 1px solid black; height: 15px;"></td> <td style="border: 1px solid black; height: 15px;"></td> </tr> <tr> <td style="border: 1px solid black; height: 15px;"></td> <td style="border: 1px solid black; height: 15px;"></td> <td style="border: 1px solid black; height: 15px;"></td> <td style="border: 1px solid black; height: 15px;"></td> <td style="border: 1px solid black; height: 15px;"></td> <td style="border: 1px solid black; height: 15px;"></td> <td style="border: 1px solid black; height: 15px;"></td> <td style="border: 1px solid black; height: 15px;"></td> </tr> </table>				Source:	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	Total																								
Source:	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	Total																												
Critical Review Elements		Secondary Review Elements																																	
<div>Does the subproject satisfy a documented OT limitation? <input type="radio"/> Yes <input type="radio"/> No</div> <div>Will the subproject deliver capability in time to support the scheduled OT? <input type="radio"/> Yes <input type="radio"/> No</div> <div>Will the subproject be completed within three years? <input type="radio"/> Yes <input type="radio"/> No</div> <div>Does the subproject support a scheduled Operational Test? <input type="radio"/> Yes <input type="radio"/> No</div> <div>Is the subproject duplicative? <input type="radio"/> Yes <input type="radio"/> No</div> <div>If so, is duplication warranted? <input type="radio"/> Yes <input type="radio"/> No</div> <div>Is the subproject executable as depicted? <input type="radio"/> Yes <input type="radio"/> No</div>		<div>Is the subproject common to multiple agencies? <input type="radio"/> Yes <input type="radio"/> No</div> <div>Can the provided capability be reasonably moved to other sites? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A</div> <div>Is the subproject low in technical risk? <input type="radio"/> Yes <input type="radio"/> No</div> <div>For threat related subprojects, has Crossbow coordination been initiated ? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A</div> <div>Has the O&M requirement been identified and coordinated? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A</div>																																	
Comments as appropriate (use separate page)		Approved as a candidate by OTECC WG on: <div style="border: 1px solid black; width: 100px; height: 15px; display: inline-block;"></div>																																	

Figure 3a. REP Nomination Assessment Report

Resource Enhancement Project FYXX Nomination Assessment Report Continuation Sheet			
<table border="1" style="margin: auto; width: 80%;"> <tr> <td style="padding: 2px 5px;">Name of Subproject</td> </tr> <tr> <td style="padding: 2px 5px;">Abbreviated Name</td> </tr> </table>		Name of Subproject	Abbreviated Name
Name of Subproject			
Abbreviated Name			
List the documentation that establishes the OT limitation.			
Identify correspondence that justifies duplication.			
List documentation that confirms CROSSBOW coordination.			
Document the discussion with the gaining organization regarding O&M.			
Additional Comments			

Figure 3b. REP Nomination Assessment Report
Continuation Sheet

3.5 CRITERIA REQUIRED FOR CANDIDATE ACCEPTANCE

Each Service/Agency new start subproject candidate will be briefed to the OTECC WG by the respective WG member or subproject manager for acceptance and funding consideration. The briefing will address the following topics:

- Subproject Description:
 - Provide a description of effort to be funded by REP funds.
 - If part of a larger project, briefly describe overall effort.
 - Provide detailed description of effort to be supported by FYXX funds.
 - Provide justification if more than one system will be developed/procured using REP funds.
- Shortfall/Limitation:
 - Identify documented shortfall and critical operational issues that can not be resolved.
- Impact If Not Funded:
 - Describe impact to the systems under test (SUT) if REP funds will not be provided.
 - Describe impact to the acquisition programs and milestone decisions.
- Technical Approach:
 - Describe how, what, and where the capability will be developed. (Include schematics/illustrations, if available.)
 - Describe if completion of subproject is dependent upon availability of other capability/projects or GFE/GFM.
- Operational Tests To Be Supported:
 - Enumerate programs and OTs to be supported, provide test type, test date.
- Payoff/Benefits:
 - Describe what will be the benefit realized once the capability is developed. (E.g. Multi use, cost avoidance/savings, reduce OT execution, risk reduction, etc.)
- Management Approach:
 - Identify the government organization/contractor who will be developing capability.
 - Describe what will be In-house effort and contractor effort (if known).
 - Identify coordination with other Service/Agency/Organization.
- Funding:
 - Provide a monthly O&E plan to forecast how funding will be obligated and expended.
 - Provide a spend plan.
 - Provide funding profile and identify other sources of funding and the amount provided.

- Schedule:
 - Provide a complete schedule of activities. This should include significant milestones from subproject initiation to achieving operational capability.

The respective WG member or subproject manager will brief each Service/Agency continuing subproject candidate to the OTECC WG for funding consideration. The briefing will address the following topics:

- Subproject Description:
 - Provide overall description of subproject.
 - Describe effort to be supported using FYXX funds.
- Subproject Status:
 - Describe subproject current status (technical assessment as where the subproject currently stands). Include any deviation from scope of work proposed in the previous year, major procurement, significant milestones achieved, tests completed, and work in progress.
- Funding:
 - Provide current O&E (actual) status for previous year(s).
 - Provide proposed O&E (Spend) plan for FYXX.
 - Provide funding profile if changes were made.
- Schedule:
 - Provide a complete schedule of activities. (Previous year(s) schedule should be updated to annotate activities/milestones that have been achieved.)
 - Describe any change/deviation from previous year schedule and provide rationale for change.

The OTECC WG will evaluate Service/Agency subproject nominations for the funding support under the REP based on the criteria and guidelines listed below. These criteria and guidelines impact the findings of the suitability of the candidate subproject to receive REP funding, and, once the candidate is accepted, impact the prioritization of the accepted candidate. The criteria and guidelines are depicted to identify their general impact on each phase of candidate acceptance and subproject prioritization.

Candidate subprojects submitted for funding consideration are required to meet the following criteria in order to be accepted as a REP subproject.

- The subproject may not require more than three fiscal years of REP funding.
- The subproject must resolve a documented OT shortfall within the next three years from subproject start. Subprojects nominated for inclusion in the REP should solve a test resource shortfall for a specific OT. A follow-on operational test and evaluation (FOT&E) that addresses issues not fully addressed in an initial operational test and evaluation (IOT&E) is supportable when the FOT&E supports a milestone or development decision. FOT&Es that have as a major thrust the support of tactics and training efforts are not supportable by REP.

- The identified shortfall must be consistent with formalized OT planning as reflected in the approved TEMP(s) for specific systems or in other approved formal OT&E planning source documents. Whenever possible, the TEMP documented shortfall should be cited by direct reference.
- The subproject must support a milestone or development decision on a system (to include major upgrades) within the next five years.
- If the subproject can reasonably be considered as duplicating an existing capability, evidence must be provided that proves that the duplication is reasonable and warranted, or that the potential duplication concern has been addressed. [For example, in the event that a dense signal environment capability is proposed where another exists, these may reasonably be seen as duplicative. Evidence to be provided would either prove the need for duplication to be acceptable (i.e., workload projections for the two facilities, duty cycle/power/ bandwidth shortfalls in the existing asset, or mobility difficulties with the existing asset) or that the duplication issue has been addressed (i.e., the capabilities provide similar densities, but differing signal fidelities; the capabilities provide similar fidelities, but cover different frequencies, etc.). In all such cases, the test requirement must be part of the evidence to prove that the potentially duplicative capability is required to resolve the OT shortfall.]
- The subproject must have a firm completion date prior to the first OT need date.
- The subproject must be executable as depicted in the submission documents. [Note: Responsibility is vested in the submitter to depict all sources of funding required and provided to support the development or acquisition of the proposed capability.]

3.6 PROGRAMMATIC FUNDING GUIDELINES

While REP is designed to resolve OT shortfalls, other selection considerations exist. These REP funding guidelines are examined during the review of candidates to determine whether REP funds can be satisfactorily used within these programmatic guidelines:

- REP funds may only be used to support efforts which occur between the generation of the requirement and the initial installation and checkout of the equipment. REP funds may not be used to fund the conduct of the supported OTs or for O&M costs which occurs after initial installation.
- REP funds may not be used to fund the manufacture or procurement of multiple copies of a capability unless specifically required to resolve documented OT shortfall and authorized by the OTECC. (Such situations will be considered for exception upon request by the OTECC WG member and reviewed for suitability by the OTECC WG.)

- TRAP processes and the OTECC WG Chairman's administrative support budget are exempt from the three year funding limitation because of their unique roles in support of the ongoing REP process.

3.6.1 FUNDING OF FOREIGN MATERIAL UTILIZATION

REP will consider funding the transport, instrumentation, integration and characterization of foreign materiel in those cases where an OT shortfall exists and the asset is included in a Service or OSD list of assets to be acquired.

3.6.2 FUNDING OF REP THREAT SIMULATOR SUBPROJECTS

REP will consider funding the development of threat simulators that are not ACAT III programs (i.e. open-air, Emitter, Receiver, Processor threat simulator).

3.7 OTHER GUIDELINES FOR CANDIDATE ACCEPTANCE

In addition to the above criteria, each candidate must address the following:

- For candidate subprojects requesting REP funds to augment a portion of a larger effort, the following items must be addressed:
 - depiction of all other sources and levels of funding, level of confidence that the other funding is budgeted and will be forthcoming, impact to overall project if REP funds are approved and other funding is reduced or withdrawn,
 - a clear description as to exactly what effort the REP funds will accomplish or contribute to the overall project, and
 - any future plan for enhancement or upgrade to the proposed capability.
- Coordination addressing O&M support must be completed with the gaining organization prior to submission to the OTECC. Since O&M support is generally required for all REP assets, the organization which will ultimately receive the developed capability must be notified of the intent to develop that capability before funds are provided. This requirement exists to ensure that REP does not deliver an unexpected asset requiring out-year maintenance to any organization.
- For threat related candidate subprojects covered under the purview of the CROSSBOW charter, coordination must be initiated with the CROSSBOW Committee prior to submission to the OTECC for consideration.
- Coordination with OTA Commanders must be accomplished prior to submission to the OTECC for consideration.
- The nomination package for the subproject must be provided in complete form prior to or at the time of submission to the OTECC. This nomination package will include the Quad Chart, NAR (pages 1 and 2), and O&E Plan for the proposed capability.

3.8 FACTORS CONSIDERED DURING PRIORITIZATION

While every subproject proposal addresses numerous issues, the OTECC is required to determine those subprojects that are "best for the United States" and to prioritize those candidates ahead of all others. Doing so requires a detailed look at each subproject, the OTs being supported, the Service/Agency commitment to funds, and a plethora of other parameters or factors. Subprojects do not require conformance to the below guidelines; however, these guidelines are provided to identify the type of questions asked by the OTECC when determining relative priorities of the subprojects for each fiscal year:

- Is the equipment to be developed standardized, where practical, for use by all Services/Agencies?
- Is the capability mobile and/or transportable?
- Is the subproject low in technical risk?
- Does a multiple service/agency requirement exist for the capability?

3.9 OTECC WORKING GROUP PRIORITIZATION VOTING PROCESS

Each Service/Agency will generate an individual, prioritized list of proposed REP subprojects for the fiscal year under consideration. The OTECC WG Chairman will visibly post the name of each subproject identified to compete for a given priority level, along with its budget (exclusive of out-year funding requirements) for each of the Services/Agencies. The OTECC WG Chairman will then call upon the designated Service/Agency members at random to vote for any of the subprojects nominated by the other Services/Agencies as the best candidate subproject. (A Service/Agency cannot vote for its own subproject.) The Services/Agencies will vote to determine priority on the basis of "Best for the United States" (i.e., the subprojects deemed best for the United States, regardless of Service/Agency involvement).

The OTECC WG Chairman then tallies the votes and assigns the top priority to the majority recipient. The OTECC WG Chairman will resolve issues in the event of tie and will cast the tie-breaking vote. The Service/Agency receiving the majority of the votes will then offer its next highest priority subproject for consideration. The cycle continues until all proposed subprojects have been prioritized.

Example:

The Air Force prioritizes its subprojects F1, F2, F3, etc. Similarly, the Army prioritizes A1, A2, A3, etc., the Navy selects N1, N2, N3, Marine Corps prioritizes M1, M2, M3, etc. and JITC selects J1, J2, J3, etc. Each Service/Agency offers its highest priority subproject for consideration:

A1	N1	F1	M1	J1
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The votes are taken and tallied for the subprojects with each Service/Agency selecting between those offered by the other Services/Agencies:

A1	N1	F1	M1	J1
Navy vote	Army vote Air Force vote JITC vote Marine Corps Vote			

As a result, the top priority REP subproject is "N1". The Navy then offers its next highest priority subproject for consideration and the voting continues.

A1	N2	F1	M1	J1
Navy vote Air Force vote JITC vote	Army vote Marine Corps Vote			

Now, the Army A1 subproject receives the second priority and the process repeats until all Service/Agency candidate subprojects are prioritized.

Each Service/Agency will be allowed to vote even though they have not presented any subproject candidates as long as they were active participants in the reviews of the potential new start subprojects. Agencies which were not active participants in the reviews of potential new start subprojects will not be allowed to cast a vote during the prioritization voting process. This will ensure a strong, defensible list of prioritized new starts.

Under no circumstances will any WG member be permitted to cast more than one vote during any single prioritization round. In the event that a Service/Agency representative declines to cast a vote, the process will continue for prioritization without the input of that Service/Agency. The tie-breaking process will be used when necessary to determine the subproject that is to be given the majority vote. Delegation of a vote to a support contractor or other Service/Agency is not permitted.

3.10 DEVELOPMENT OF THE PROPOSED REP SUBPROJECT LIST

The proposed subproject list is the result of OTECC WG prioritization voting process and examination of all REP initiatives requiring expenditure of funds covering not more than a three year period. Based upon analyses of REP nominations, the OTECC WG will develop an "unconstrained" prioritized list for submission and recommendation to the OTECC. While the OTECC WG may recommend that funding of specific subproject(s) not be supported; the OTECC WG will inform the OTECC of all submissions to include any subprojects rejected for submission by the OTECC WG

members. Based upon the completed analyses, the recommendations of the OTECC WG, and insight and knowledge of DoD-wide OT issues, the OTECC Principals will make a final determination of specific subprojects and funding levels for each subproject for a given fiscal year. The proposed REP “unconstrained” subproject list for a given fiscal year will be adjusted by the OTECC Principals for fiscal concerns or any special needs.

3.11 REP FUNDED SUBPROJECTS

The “unconstrained” subproject priority list established by the OTECC Principals and approved by DOT&E, in coordination with the DTTSG, for a given fiscal year is the basis of REP funds distribution. Funds released by the CTEIP PM for REP execution are distributed according to the subproject priority list that was approved by the DOT&E until all funds are distributed. In the event that only partial funding is available for a given subproject, a determination is made by the OTECC Principals, based on the recommendations made by the OTECC WG, whether to partially fund that subproject or allocate those funds to the next highest priority subproject. The subproject managers for REP funded subprojects must be able to obligate all funds by the end of the fiscal year and expend funds according to the approved O&E Plan.

3.12 OUT-OF-CYCLE NOMINATIONS

The OTECC recognizes that there are unforeseen OT&E issues that may arise in any given year and conditions such as emergent test requirements, new threat developments, and new technologies that may alter/impact test schedules and require the use of test resources that were not planned. In order to respond to such immediate needs, the OTECC has a provision to consider out of cycle REP nominations at any time during the year. Out of cycle REP nominations will be submitted and processed as follows:

- (1) Requirer or prospective executing activity submits a full nomination package, including a Quad Chart, NAR and O&E Plan to the OTECC WG member.
- (2) After coordinating with and obtaining concurrence from the appropriate Service/Agency OTECC Principal, the OTECC WG member requests that the OTECC WG Chairman allocate time at an upcoming OTECC WG meeting to address the special funding request.
- (3) The OTECC WG reviews the request, determines relative priority and agrees to a recommended course of action to be presented to the OTECC via the OTECC WG Chairman. The presentation to the OTECC may require the support of the OTECC WG member and the submitter, requirer, or subproject manager for the out of cycle nomination.
- (4) If the request is received before the REP PMP&D is finalized, the OTECC

WG will review the request, determine priority considering anticipated funding, and re-prioritize the candidate subprojects with a recommendation for action to the OTECC Principals.

- (5) If the request is received after the REP PMP&D for that FY is issued, the OTECC WG will review the request, determine relative priority and recommend an appropriate course of action to the OTECC Principals. The recommendation will address priority and necessary reprogramming of funds or the need to seek additional funding from OSD.
- (6) For nominations received after the PMP&D for a given FY is issued, the OTECC determines dollar amounts that may be shifted from existing subprojects. These fund reallocation decisions will be based upon evaluations of the execution progress of the existing REP subprojects and the relative criticality of the out-of-cycle submission when compared to the existing prioritized list of REP subprojects. If the late submission is deemed worthy of reprogramming, then the OTECC will direct the OTECC WG to perform all necessary reprogramming actions to shift funding between specific subprojects. The Executing Service/Agency (from which funds are to be re-programmed) OTECC Principal must concur before any REP subproject loses funds as a result of the approval of an out-of-cycle submission. The OTECC Chairman will document this decision and the reasons for it in a memorandum for record distributed to the OTECC and OTECC WG.
- (7) The CTEIP PM is notified by the OTECC Chairman of modifications to the approved REP for the respective FY.

SECTION 4. PROJECT EXECUTION

4.1 GENERAL

This section addresses the Project Management Plan and Directive (PMP&D), Test Package Directive (TPD), and Subproject Management Plan (SMP), and the execution phase of the REP, including: financial procedures, monitoring the progress of REP funded efforts, adjustments to the subproject for the current and following fiscal years and subproject reviews.

4.2 PROJECT MANAGEMENT PLAN AND DIRECTIVE (PMP&D)

A PMP&D will be prepared by the OTECC WG Chairman in response to the Test Package Directive (TPD) issued by CTEIP PM. The PMP&D will be provided to the OTECC WG for their review and coordination with their respective OTECC Principals. After coordination, the PMP&D will be forwarded to the OTECC Chairman for approval.

The approved PMP&D will constitute the project baseline and understanding between OTECC and the CTEIP PM. The PMP&D will provide a description of the overall REP project and list all subprojects to be funded by REP. It will contain the subproject Quad Charts, consolidated milestone/schedules, and O&E plan summary.

Any change to the approved subprojects listing for a particular fiscal year will be documented as an amendment to the approved PMP&D for that fiscal year. The PMP&D amendment will be in the form of page changes and will require the same review and approval as the basic PMP&D for that fiscal year.

Appendix E provides the generic outline for the PMP&D.

4.2.1 TEST PACKAGE DIRECTIVE (TPD)

A TPD will be issued annually by the OTECC Chairman to all subprojects selected to receive REP funding at \$1M or more in any execution year or \$5M over the duration of the subproject. The TPD will contain guidance on performance, parameters and technical characteristics, schedule/milestones, and cost against which the subproject manager will execute the subproject.

The format and contents for the TPD is provided in Appendix F.

4.2.2 SUBPROJECT MANAGEMENT PLAN (SMP)

In response to the TPD, the subproject manager will prepare and submit to OTECC a SMP coordinated through the OTECC WG member and Principal. The SMP will provide the technical description of the subproject, requirements that established the need, capabilities to be achieved, critical/key issues, OTs to be supported, management approach, spend plan, funding distribution, and schedule. The SMP will be consistent with the guidance provided in the TPD and will be prepared in accordance with Appendices G and H (format and checklist). The SMP will address how the subproject will be transitioned to the gaining Service/Agency/organization and provide the O&M funding estimates that may be required to sustain the O&M of the capability. The SMP submitted for each REP subproject will be reviewed by the WG. Any comments/issues will be resolved before it is forwarded to the OTECC Chairman for approval. A copy of the approved SMP will be provided to the CTEIP PM.

The approved SMP, along with the TPD, will constitute a contract between the subproject manager/Executing Activity, the OTECC WG member, the Service/Defense Agency, OTECC Principal/Resource Manager, and the OTECC Chairman in the execution of the subproject. The REP subproject's performance will be measured against the schedule and funding described in SMP.

4.3 FUNDING

Funding information included in the subproject Quad Chart and O&E plan are for planning purposes only. Subproject funding level will be established in the PMP&D. Only the approved subprojects described in the PMP&D will be funded by REP. Funds will be released by the OUSD(A&T)/DTSE&E CTEIP PM directly to the designated REP financial manager.

Once funding has been released, the subproject should be executed according to the baseline set forth in the PMP&D for that fiscal year. Any breach to the following thresholds will be reported to the OTECC WG Chairman by the subproject manager, through their respective OTECC WG member, within 10 working days in writing. Any projected breach or deviation within the next 90 days that will impact cost, funding, schedule, performance, or requirements should be reported to the OTECC WG Chairman by the WG member. Recommended course of action and alternatives considered should be similarly forwarded within 30 days of initial notification.

- a. Cost - 10% or \$100K (which ever is less) deviation for any given fiscal year.
- b. Ancillary funding sources - loss, or impending loss, of non REP funding sources which may cause the subproject (as described in the Quad Chart) to become non-executable within planned schedule and/or costs.
- c. Schedule - slips of 90 days for milestones identified in the Quad Chart or any

inability to provide an initial operating capability in advance of the scheduled OT, to include breaches caused by a rescheduling of the OT.

- d. Failure (or projected failure) to meet established technical performance requirements.
- e. Changes which are projected to impact upon any procurement, acquisition or resource action planned or underway.
- f. Cancellation or delay of any supported program or OT.

The OTECC WG Chairman is responsible for notifying the OTECC Chairman within ten working days of the situation. The OTECC WG Chairman, as directed by the OTECC Chairman, may form a technical or administrative subcommittee to examine the options available to correct any breach. These options include, but are not limited to, adjustment of the subproject budget, re-scoping the technical program or canceling the subproject. The subproject manager will submit to the OTECC WG Chairman, through their respective WG member, a revised Quad Chart and O&E Plan within 30 days of decision to correct such breach.

4.3.1 FUNDING ALTERNATIVES

In some instances, a REP subproject receives funds through the REP as well as from other sources. In those cases, the capability funded by REP should be explicitly identified. In cases where the REP funding provides for upgrades or improvement of a current capability, the improvement resulting from REP funding is to be specifically identified. In all cases, the reason that REP funding is being used as opposed to Service funding or funding from an individual acquisition project should be specifically addressed in the Additional Comments section of the NAR, Continuation Sheet.

4.3.1.1 FUNDING FOR OPERATION AND MAINTENANCE (O&M) AND PROCUREMENT

The O&M cost of new capabilities or the procurement of additional quantities beyond attainment of operational capability is not funded by REP. Follow-on procurement and O&M are Service/Agency responsibilities. Follow-on procurement costs must be identified in the Quad Chart. The rough order of magnitude O&M costs must be annotated in the Additional Comments section of the NAR, Continuation Sheet.

4.3.2 DISTRIBUTION OF FUNDS

OSD provides funding to the REP designated financial POC via direct allotment as early in the fiscal year as possible for timely distribution to the executing activities. The designated REP financial manager will issue funds on a DD Form 448, Military Interdepartmental Purchase Request (MIPR) or other appropriate funds distribution document in accordance with the amounts specified and authorized by the OTECC.

Funds will either be accepted as a reimbursable order (to cover in-house costs) or direct cite (contract costs).

Subprojects, with lagging obligation and/or expenditure rates or with other difficulties that change their fiscal year requirements, may be issued a decreasing MIPR by the designated REP financial manager at the direction of the OTECC Chairman in coordination with the other Service/Agency Principals. Any changes to the funding for a subproject will be provided in writing to the designated REP financial manager over the OTECC Chairman's signature.

No new contractual obligations may be incurred after the established expiration date without a formal extension to the expiration date of the MIPR (or other appropriate funds distribution document). Extensions may be granted by OUSD(A&T)/DTSE&E in writing. The request to extend the funds expiration should be processed through the designated REP financial manager to CTEIP PM. The request will include the amount, justification as to why the funds need to be extended and a date as to when the funds will be obligated. The approved extension will be documented in an amendment to the basic MIPR (or other appropriate funds distribution document) and returned to the requesting Service/Agency. Resulting MIPRs will be prepared and distributed by the Service/Agency financial POC to the executing activity.

4.3.3 RE-DISTRIBUTION OF FUNDS

The Services/Agencies can re-program up to 10% or \$100K, whichever is less, of the budget of any funded subproject to any other funded subproject in a given fiscal year without prior OTECC Principals approval. Notice must be provided in writing to the OTECC WG Chairman, with full documentation of the amount of funds to be transferred, the originating subproject, the receiving subproject, and the new budgets for each subproject. Transfer will take place upon re-issuance of MIPRs by the REP financial manager. REP funds may not be used to fund any subproject or effort that has not already been allocated funds for that FY by the OTECC. Monthly obligation and expenditure reports following the transfer will be adjusted to the new funding levels. O&E plans for each affected subproject must be updated and submitted to the OTECC WG Chairman. The OTECC WG Chairman will advise the OTECC of the transfers as they become known and prepare the appropriate documentation confirming the transfer.

Transfers from a given subproject in excess of the 10% or \$100K (whichever is less) of the programmed budget in a given fiscal year or transfers which will result in an annual shift of more than 10% or \$100K of the original program budget published in the PMP&D require the prior concurrence of the OTECC and approval by the OTECC Chairman before action is initiated. Where transfer of funds are requested to take place within a single Service/Agency, the Service/Agency OTECC WG member will contact the OTECC WG Chairman to schedule an OTECC meeting to discuss the proposal. Where funding transfers are to be considered across Services/Agencies, the interests of the OTAs will be examined through an OTECC WG review. The OTECC WG will then establish

recommendations on the transfer to pass to the OTECC for approval. For urgent transfer actions of either type, the OTECC WG representative will contact the OTECC WG Chairman, detail the cause of the urgency, and request that the OTECC WG Chairman solicit the approval of the OTECC for the transfer as quickly as possible (a verbal request will be followed up in writing). The OTECC WG Chairman will then solicit the approval of the OTECC Executive Board or convene an emergency meeting to obtain full authorization. Transfer will take place upon re-issuance of MIPRs by the REP financial manager.

In the event that funds become available because of subproject cancellation, unacceptable subproject execution or re-direction, the OTECC WG will make recommendation(s) on the best use of these funds. Factors to be considered are currently executing subprojects, subprojects approved but below the funding line, and out-of-cycle subprojects. All final funds re-distribution will be approved by the OTECC.

All re-distribution/transfer decisions will be documented by a memorandum prepared by the OTECC WG Chairman, with input from the OTECC WG members, for signature by the OTECC Chairman. Concurrence by the OTECC Principals (e.g. electronic mail) is required for re-distributions requiring OTECC approval. For re-distributions not requiring OTECC Principals prior approval, OTECC Principals notification will be annotated on the OTECC file copy of the signed memorandum. Copies will be provided to the OTECC Principals and OTECC WG members.

For re-distributions requiring OTECC approval, the memorandum will be executed within 72 hours of the decision with copies provided to the OTECC WG member for forwarding to the Executing Activity and the affected subproject managers. Copies of all funds transmittal documents will be provided to the OTECC WG Chairman.

4.3.4 FINANCIAL ANALYSIS

The OTECC WG's active administration of the REP includes performing regular cost analysis and financial assessments. The designated subproject manager will provide the OTECC WG with available information on costs, expenditures, and obligations when requested. The OTECC WG will conduct a semi-annual review of those subprojects with an acceptable financial performance. The OTECC WG will conduct bimonthly reviews on those projects exhibiting financial or technical problems. The OTECC WG Chairman will report the results of these analyses to the OTECC Principals.

For each of these reviews, and during routine examination of subprojects under execution, the OTECC WG will compare the obligation and expenditure reports to the O&E Plan. The O&E Plan becomes final upon the approval of the PMP&D (and SMP, if required). Once funds have been issued, the O&E Plan may only be updated if one of the following situations occurs and is documented in writing (with the documentation detailing the date and condition requiring the update) within 30 days by the subproject

manager and submitted to the OTECC WG Chairman through the appropriate OTECC WG member:

- a. Upon the release of any funds (to include Continuing Resolution Authority (CRA) funding and regular REP funding).
- b. Upon any change in the level of funding for the subproject.
- c. Upon any change in the schedule of the first test supported by the REP subproject.
- d. Upon the occurrence of any documented impact to the program not controllable by the subproject manager, such as protest to a contract or a delay in the delivery of a critical system component due to a contractual breach.

4.3.5 FINANCIAL REPORTS

For each REP funded subproject, the subproject manager, through the respective OTECC WG member, will submit a monthly status report that will show the major accomplishments/milestones achieved during the preceding month, upcoming events, any technical/funding/schedule problems, and the actual O&E. Any deviation from the subproject baseline with reasons for deviation will be addressed in this report. The O&E will include:

- obligations (defined as the amount of an order placed, contract awarded, service rendered, or other transaction that legally encumbers a specified amount of an appropriation or fund for expenditure),
- expenditures (defined as the total of disbursements plus accruals),
- disbursements (defined as the charges against available funds representing actual payment and evidenced by vouchers, claims, or other documents approved by competent authority), and
- accruals (defined as the costs incurred during a given period representing liabilities incurred for goods and services received, other assets acquired and performance accepted, prior to payment being made).

The report will be provided to the OTECC WG Chairman or designated agent, through the respective OTECC WG member, by the 15th day following the end of the month. The OTECC WG Chairman will consolidate inputs and forward a consolidated report to DOT&E, DTSE&E, and designated OSD financial manager by the 20th day of the month. A copy of the report will be provided to the OTECC Principals and OTECC WG members. Appendix I contains the format for the monthly report.

Other monthly reporting requirements will be annotated in the MIPRs or other appropriate funding documents prepared by the Service/Agency financial POC for each REP subproject.

4.4 PROGRAMMATIC/TECHNICAL REPORTS

Periodic reports on the programmatic and technical progress of specific subprojects may be requested by any OTECC Principal. Copies of formal requests made by the WG member to the subproject manager will be provided to the respective OTECC Principal.

A self assessment report for REP will be prepared by the OTECC WG Chairman and submitted to the CTEIP PM on an annual basis. This report will be based on the monthly status and financial report submitted by the OTECC WG members. It will provide, as a minimum, the technical and financial status of the subproject, the problems encountered and resolution taken to correct problems (if any), and pending subproject issues/decisions. The contents of the self assessment report is provided in Appendix J.

Upon the completion of the subproject, the subproject manager, through the OTECC WG member, will submit a final report (for all subprojects meeting the \$1M/5M CTEIP threshold) to the OTECC, 90 days after the subproject has achieved operational capability for forwarding to the OTECC. The data that must be included in the final report are provided in Appendix K.

4.5 SUBPROJECT REVIEWS

All REP subprojects will be reviewed at least twice annually: once during the joint meeting between the OTECC Principals and the OTECC WG in preparation for or during the CTEIP mid-year review and a second time by the OTECC WG on-site at or near the location where the subproject is being executed, if practicable and possible.

The joint meeting between the OTECC Principals and the OTECC WG in preparation for or during the CTEIP mid-year review is normally scheduled for the March-April time period and conducted in the Washington, D.C. area. The OTECC WG Chairman will be responsible for briefing, during the CTEIP mid-year review, all subprojects whose FY funding is below \$1M. The WG member or the subproject manager of subprojects whose funding is \$1M or more in any execution year or \$5M over the duration of the subproject will be responsible for providing the briefing for the CTEIP mid-year review. The format and topics for the CTEIP mid-year review is contained in the CTEIP PEG.

The WG member or the subproject manager will be responsible for providing a briefing on-site regarding the current technical, schedule, and funding status of the subproject, to include other requirements identified by OTECC.

REP subprojects are also subject to an in-process review whenever subproject financial, technical, and/or schedule variances warrant.

The WG member or the subproject manager is required to address the following topics at each of these reviews or whenever requested by the OTECC Principals:

- a. Detailed description of the project with an emphasis on the portion supported by REP funds
- b. OT shortfalls/limitations being addressed
- c. Technical approach
 - (1) Deviations from original technical approach, if any
- d. Management approach.
 - (1) Subproject schedule as compared to scheduled OT support requirement
- e. Technical status
 - (1) Problem(s) and potential solutions
 - (2) Current risks
 - (3) Current schedule compared to planned schedule
- f. Contract status, if appropriate
 - (1) Contract description, contractor, location where work performed, and contract value
 - (2) Cost variance
 - (3) Schedule variance
- g. Funding status
 - (1) Obligation status, current as compared to planned
 - (2) Expenditure status, current as compared to planned
 - (3) Solutions to variances, if any
 - (4) Shortfalls, if any
 - (5) O&M funding status. Provide a rough order of magnitude estimate of the O&M costs to be incurred
- h. Payoffs and benefits to be realized.
- i. Describe what has been accomplished to date with respect to capability development and, if appropriate, OTs supported.

A read-ahead copy of the planned presentation should be provided to the OTECC WG Chairman at least 10 days prior to the review for distribution to the meeting participants. An electronic copy of the final presentation compatible with Microsoft Office suite (PowerPoint, Word, and Excel) will be provided by the subproject manager, through the OTECC WG member, to the OTECC WG Chairman via electronic mail or 3.5" PC format floppy disk.

4.6 SUBPROJECT BRIEFINGS

A two-chart briefing set has been developed to depict the essential elements of each REP subproject. These charts are used to support quick turn around requests for information, presentations requested of the OTECC Chairman and the OTECC WG Chairman and for presentation at the CTEIP mid-year execution review.

The format and content requirements of the briefing charts are as depicted in Figures 5a and 5b.

All subproject managers are required to provide, through their respective OTECC WG member, the following:

- a. a color (preferable) photograph or print quality illustration depicting the subproject and an electronic submission of the photograph/illustration (in pict, gif, or tiff format),
- b. a color (preferable) photograph or print quality illustration of their organizational logo,
- c. a bulletized version of the subproject description, and
- d. a short sentence listing of the various payoffs and benefits that having this capability will provide (e.g. cost avoidance/savings of XX dollars per year, reduced number of mission sorties, system can be integrated and used at any DoD range).

The WG prepares and completes the briefing charts using the information provided in the subproject Quad Chart and O&E Plan.

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Figure 5a. REP Briefing - Chart 1

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PAY-OFFS/BENEFITS																														

Figure 5b. REP Briefing - Chart 2

4.7 MANAGEMENT OF REP FINANCED ASSETS

REP financed assets will be managed and maintained by the individual Service/Agency responsible for its acquisition.

4.8 OTECC PRINCIPALS MEETINGS

Meetings between the OTECC WG Chairman and the OTECC Principals are held on a periodic basis to review the status of the REP. The read-ahead material is required by the OTECC WG Chairman at least 10 calendar days prior to the meeting for consolidation and distribution to the OTECC Principals. Preparation of read-ahead material regarding a specific subproject is the responsibility of that subproject manager and should be provided through the respective OTECC WG member.

4.9 REP SUBPROJECT DATA

The REP subproject manager will provide, through their respective OTECC WG member, the details on the distribution of funds for each subproject. The data will include the identification of the contractor or government agency by name, the location (city and state) where the work is being performed, the dollar amount related to that effort, and the type of agency performing the work (for profit contractor, non-profit contractor, or government). The entire budget for each subproject will be identified in terms of the tasks and budgets. Table 2 is an example of the list of information to be provided by each REP subproject manager.

Service/ Agency	REP Subproject Title	Contractor	City	State	Value (\$K)	Gov/Contr	Type of Contract
(Indicate name of Service or Agency)	(Indicate name/title of REP Subproject)	(Indicate company Names of all Contractors or Government Agencies)	(Indicate name of city where work is being performed by the Contractors or Government Agencies)	(Indicate the name of state where work is being done)	(indicate the entire budget to complete effort)	(Indicate C for Contractor, G for Government, NP for Non-Profit Organization)	(Indicate the type of contract, i.e: CPFF, FP, CPTF, CP, etc.)

Table 2. REP Funds Distribution

Appendix A

Quad Chart Preparation

Quad Charts are the key management documents for the Resource Enhancement Project (REP). Identified in the Quad Chart are the principal individuals and organizations involved in the execution of the REP subproject; a detailed description of the subproject; the operational tests (OTs) to be supported; the subproject acquisition or development schedule; the subproject funding stream and the rationale that establishes the need and criticality of the subproject.

The following guidelines must be followed when preparing the Quad Chart. An illustration of the Quad Chart with a brief description of the guidelines for each section is at Figure A-1. Note that the timelines for the subproject schedule and the funding stream are centered on the current fiscal year. With REP funding of subprojects generally constrained to three years this scheme allows the portrayal of the full funding stream for each ongoing subproject.

Name of the Subproject:

Provide the full name of the subproject and an abbreviated name to be used for short hand identification. Ensure that the abbreviated name does not conflict with any currently used acronyms.

Administrative Section:

Provide the full name and rank (if appropriate) of the individual who will be the subproject manager and an alternate, that can be called directly to answer questions regarding the technical performance, schedule and financial status of the subproject. These individuals should not be Operational Test and Evaluation Coordinating Committee (OTECC) Working Group (WG) members but members of the Executing Activity. Provide voice and FAX numbers that are accurate and current.

The Origin Date is the date that the subproject documentation is initially prepared. This date is automatically entered and will not change.

The Modification Date is entered and will change whenever an entry is made to the subproject record in the REP automated management information system (RAMIS). It does not necessarily mean that a change was made to the Quad Chart.

Executing Service is the military service or Department of Defense (DoD) agency sponsoring the subproject. The executing activity is the organization to which the subproject manager is assigned. Identify the military installation or city and the state where the executing activity is located.

Subproject Description:

Provide a comprehensive, detailed description of the subproject. The reader must have a clear understanding of exactly what is being developed or acquired using REP funds. Address such things as critical performance characteristics, critical technical parameters, and key hardware and software interfaces.

If REP is funding but a portion of a larger project, provide a succinct (one or two sentence) description of the entire project. Provide specific details on that portion receiving REP funding.

Specify the deliverable to be obtained with REP funds. For multi-year subprojects, specify how that fiscal year's funds will be used. Every subproject description should clearly indicate "Current REP funds will (purchase/develop/obtain)...."

The amount of detail provided is constrained only by the space available in that section of the Quad Chart.

Operational Tests to be Supported:

Identify each OT that has a documented shortfall that will be satisfied in whole or part when the capability provided by the described subproject is available. The shortfall must be documented in an approved Test and Evaluation Master Plan (TEMP) or other approved test planning documentation.

- Specify the type of OT to be conducted. Follow-on operational test and evaluations (FOT&Es) which have as their major thrust the support of tactics and training efforts are not supportable by REP.
- Identify the test start date. The date must be shown as the fiscal quarter and fiscal year or the calendar date. This date will be used as a benchmark to determine if the subproject as scheduled will provide the capability to support the identified testing in a timely fashion. The completion of the subproject or at least attainment of an operational capability must take place before the first identified OT need date for the subproject to qualify for REP funds.
- Highlight in bold the title(s) of the OT(s) that are driving the need for this test capability.
- List the OTs to be supported in chronological order based on OT start or test need date.
- In the event that the capability being developed by REP is not required until a later phase of testing, show as the test date, the date that the capability is actually needed. The date must be shown as the fiscal quarter and fiscal year or the calendar date. If the need date is not the OT start date, denote such by placing the date in parentheses -- i.e., (4QtrFY00).

Constraints/Limitations to Scope:

Clearly describe in this section the test limitation or shortfall that is documented in the test planning documents of the OTs to be supported. The description must allow the reader to make a direct association between the subproject as described and the capability to be obtained and the limitation/shortfall. In essence, this section is intended to answer the question, "Why do you need this capability?"

Identify the Critical Operational Issue (COI) or performance parameter that cannot be addressed because the test capability to be obtained is not available.

This section establishes the basis or reason for undertaking the subproject. A description of why the shortfall exists that requires REP funding should be included. For example, specific Director, Operational Test and Evaluation (DOT&E) requirements added on, meeting project milestones, etc. This section, along with the statement of impact, provides the basis to support the OTECC decision to fund the subproject. Your answer should focus on the problem that will be alleviated when the requested capability is available.

The determination whether to undertake a given subproject will generally be made considering whether the identified test limitation or shortfall can be overcome sufficiently to minimize the uncertainty surrounding an upcoming decision.

Some typical constraints would be:

- Inability to address a specific Critical Operational Issue and Criteria (COIC). Reference the source document if quoting a COIC.
- Inability to assess the testing of a specific component of the system under test which is required by the test plan or TEMP - identify the component.
- Inability to process data in a timely fashion necessary to execute the test in the time frame available - identify the data elements that will be missing.

Impact If Not Funded:

Provide a statement that will support the OTECC Principals when addressing the need for this capability with senior level test and evaluation (T&E) decision makers, the Congress and audit agencies. Consider the specific operational performance and/or suitability issues or questions that will not be adequately addressed if the described capability is not available and the impacts on the acquisition/development or product improvement program that is scheduled for OT. This may be (for example):

- the impact on the ability of the operational evaluators to adequately evaluate the operational performance or suitability of the system in support of an upcoming milestone decision;
- the degree of risk that the acquisition decision makers must accept; or
- the costs that will be incurred if the required capability is not available.

In essence, this section addresses the question, "What happens if you do not receive the funding requested and the capability is not available?"

Provide the fundamental rationale for executing the subproject. The answer should be distinct from the "Constraints/Limitations to Scope" as the constraints and limitations section addresses the test shortfall that has caused your need to secure the capability, whereas the impact if not funded is intended to identify the cost or schedule impacts, additional mission costs, and decision risk that will result if the funding is not provided.

Typical impacts if the requirement were not funded causing a portion of the OT to be not executed or not affordable would be:

- A specific test phase (describe the objective of the test phase) cannot be conducted as the required data collection or analysis cannot be performed.
- Live fire testing using realistic threat systems cannot be performed.
- The ability of the "system" to maintain communication linkage in a high density signal jamming environment cannot be evaluated.
- Additional sorties must be flown to address test issues not solved by the proposed real-time data analysis system. Without the new capability, the OT cannot secure all of the data required by the test plan within the number of sorties permitted by the test budget.

Subproject Schedule:

Include only those milestones that are critical to the success of the subproject, i.e., if not achieved by the time identified the subproject completion will be delayed or additional funding will be required. Identify, particularly, the milestones against which progress can be measured on a periodic basis. At a minimum include the subproject start date, contract award date, contract performance period (if applicable) and the date that an operational capability will be available to support operational testing. It is critical that the capability provided by the subproject be available to support the identified first OT start date. The operational capability should be depicted as a point in time not as a period of time.

Funding Profile (\$M) by Fiscal Year:

Include the funds to be applied to the described subproject and the respective source of funding, e.g., REP, Service Research, Development, Test and Evaluation (RDT&E), etc. Identify funds available as well as projected requirements if more than one year of funding is required. For previous years include the funds actually received.

Include all sources of funding that are or will be needed to fully develop or complete the capability, particularly in those cases where REP is providing but a portion of the required funding.

Identify known shortfalls in funding occurring after subproject start that are needed to complete the subproject as described. This does not include funds to provide additional capability or capacity.

Appendix B

Nomination Assessment Report Preparation

The Nomination Assessment Report (NAR) documents the results of the analysis completed by the OTECC Working Group (WG) to determine if a proposed subproject meets the criteria for Resource Enhancement Project (REP) funding.

The NAR will be prepared by the subproject manager for initial submission to the OTECC WG. Incomplete or inadequate documentation supporting the responses recorded on the Report can serve as grounds for rejection. A “Yes” answer to the questions regarding operational test (OT) limitation/duplication of capability and CROSSBOW coordination and “Yes or No” answer to the question concerning Operation and Maintenance (O&M) require that a rationale be provided on the NAR Continuation Sheet.

Review of the NAR along with the Quad chart, the Obligation and Expenditure Plan (O&E Plan) and the rough order of magnitude estimate of the O&M support required to sustain operations (when applicable) serves to support the decision as to whether a proposed subproject is acceptable for REP funding.

The administrative information with the exception of the Type of Subproject is directly lifted from the Quad chart for the subproject. The outline of the NAR is found at Figure B-1 with the Continuation Sheet shown as Figure B-2.

Include the reason that REP funding is being used as opposed to Service/Agency funding or funding from an individual acquisition project in the Additional Comments section.

The following guidelines must be followed by the subproject manager when preparing the unique sections of the NAR. Each of the responses should be supported by properly signed documentation.

Type of Subproject:

REP subprojects are generally categorized into six (6) subproject types. A category of "other" is available to label a subproject that does not fit directly into one of the six subproject types. These types are:

- Foreign Materiel Utilization (FMU) - The subproject involves foreign military equipment already on hand. The effort is to modify or enhance the existing capability to support use in operational testing.
- Targets - Can be an actual system, sub-scale model, surrogate system or system developed to simulate the capability and characteristics of a real-world system for use in support of tracking and/or live fire missions.
- Threat Simulator - Any unit from a family of equipment used to represent threat weapon systems. A threat simulator has one or more characteristics which, when

detected by human senses or man made sensors, provides the appearance of an actual threat weapon system with a prescribed degree of fidelity.

- Instrumentation: A hardware or software capability that is used in the collection of data.
- Modeling and Simulation: A hardware or software capability that is used to replicate/represent actual system
- Analysis Tool: A hardware or software capability that is used in the analysis of data.
- Professional Services: Support generally provided by contractors assisting in needs analysis, requirements identification, documentation preparation and subproject management and oversight.

Critical Review Elements:

Responses to these questions are used to determine if the proposed subproject qualifies for REP funding.

Does the subproject satisfy a documented OT limitation?

Yes, if there is an Office of the Secretary of Defense (OSD) approved or Service approved Test and Evaluation Master Plan (TEMP) (if the Service/Agency is final TEMP approval authority) or other approved OT test plan that identifies the specific test limitation. The TEMP or test plan should be available for review by the OTECC WG on request. A yes response requires that the documentation identifying the OT limitation be referenced in the Continuation Sheet.

No, if otherwise.

Will the subproject deliver capability in time to support the scheduled OT?

Yes, if the operational capability that will be provided by the subproject is available to support the first scheduled OT requiring this capability.

No, if otherwise.

Will the subproject be completed within three (3) years?

Yes, if completion of the REP portion of the project is within a three year period.

No, if otherwise.

Does the subproject support a scheduled OT?

Yes, if there is/are OT(s) scheduled (not just planned) within the next three year period that have documented limitations or shortfalls to be satisfied by the described subproject.

No, if otherwise.

Is the subproject duplicative?

Yes, if a similar capability exists within DoD.

For threat simulator or threat related subprojects covered under the purview of the CROSSBOW charter, coordination with the CROSSBOW committee to determine if it duplicates existing or planned capabilities should be initiated before the subproject is submitted as candidate for REP funding.

No, if otherwise.

If so, then is the duplication warranted?

Yes, if the Service/Agency sponsor can provide compelling reasons and rationale why an existing capability cannot be utilized to satisfy the OT limitation. At a minimum, documentation from the organization operating the duplicative capability attesting to its non-availability to support the scheduled testing is required. This documentation should include an analysis that provides an adequate basis supporting development of a duplicate capability. The analysis should identify points of contact with phone numbers and addresses. If duplication is claimed to be warranted, then the documentation (Memorandum for Record, formal memorandum, etc.) stating this fact and the grounds for the assessment must be referenced in the Continuation Sheet.

The duplication questions address an area of specific concern to the DoD - an area that is specifically addressed in the OTECC charter. The OTECC is charged to avoid duplication, unless warranted.

No, if otherwise.

Is the subproject executable as depicted?

Yes, if the subproject can attain operational capability on the proposed schedule with the funds identified. The Executing Activity's plan should be closely reviewed to determine if the capability could be obtained within the time and schedule constraints and still meet performance requirements.

No, if otherwise.

Secondary Review Elements.

Responses to these questions are used primarily to establish the relative priority of the subproject for REP funding.

Is the subproject common to multiple agencies?

Yes, if the capability can be used to satisfy OT requirements identified by other Services/Agencies, or if the capability can satisfy multi-service needs for OT data on a multi-service acquisition program. Documentation supporting this determination with multi-service concurrence should be on record and available for review by the OTECC WG.

No, if otherwise.

Can the provided capability be reasonably moved to other sites?

Yes, if the capability will be transportable. The assets developed/obtained do not have to be mobile, i.e., move under their own power.

No, if otherwise.

N/A, if not a valid question for the described capability.

Is the subproject low in technical risk?

Yes, if the subproject proposes to use available, demonstrated technology, proven hardware and software or other existing capabilities.

No, if otherwise.

For threat related subprojects, has CROSSBOW coordination been initiated?

Yes, if a request has been made to CROSSBOW Committee and coordination is underway. If the subproject manager or Executing Activity has, through the OTECC WG member, coordinated with the Service/Agency CROSSBOW representative and received a favorable response from the CROSSBOW Committee, the response must be maintained as a matter of record by the Executing Activity. Reference the memorandum that documented such coordination in the Continuation Sheet.

No, if otherwise.

N/A, if coordination with CROSSBOW is not required.

Has the O&M requirement been identified and coordinated?

Yes, if the O&M requirement has been determined and coordination with the proposed gaining organization has been initiated. REP does not provide sustainment funding. A yes response requires that the documentation recording the coordination with the gaining organization be referenced in the Continuation Sheet.

No, if otherwise. Provide rationale in the Continuation Sheet.

N/A, if O&M is not a consideration for the described capability

Continuation Sheet:

The Continuation Sheet contains the information supporting the responses to the questions under Critical and Secondary Review Elements.

Additional Comments:

- Document the coordination with the OTA Commanders
- Provide the reason for seeking REP funding as opposed to Service funding or funding from an individual acquisition project
- Provide other information addressing issues related to the subproject
- Include the name of the individual or the gaining organization that will maintain/sustain the capability. Include the ROM for O&M support and describe how funds will be obtained.

Resource Enhancement Project FYXX Nomination Assessment Report																																												
<div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Name of Subproject</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Abbreviated Name</div> <div style="border: 1px solid black; padding: 2px;">Subproject Type:</div>																																												
POC Name:					POC Alternate:																																							
DSN Phone:					Executing Activity:																																							
DSN Fax:					Executing Service:																																							
Commercial Phone:					City:																																							
Commercial Fax:					State:																																							
Funding Profile (\$M): <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 10%;">Source:</td> <td style="width: 10%;">FYXX</td> <td style="width: 10%;">FYXX</td> <td style="width: 10%;">FYXX</td> <td style="width: 10%;">FYXX</td> <td style="width: 10%;">FYXX</td> <td style="width: 10%;">Total</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>										Source:	FYXX	FYXX	FYXX	FYXX	FYXX	Total																												
Source:	FYXX	FYXX	FYXX	FYXX	FYXX	Total																																						
Critical Review Elements					Secondary Review Elements																																							
Does the subproject satisfy a documented OT limitation? <input type="radio"/> Yes <input type="radio"/> No Will the subproject deliver capability in time to support the scheduled OT? <input type="radio"/> Yes <input type="radio"/> No Will the subproject be completed within three years? <input type="radio"/> Yes <input type="radio"/> No Does the subproject support a scheduled Operational Test? <input type="radio"/> Yes <input type="radio"/> No Is the subproject duplicative? <input type="radio"/> Yes <input type="radio"/> No If so, is duplication warranted? <input type="radio"/> Yes <input type="radio"/> No Is the subproject executable as depicted? <input type="radio"/> Yes <input type="radio"/> No					Is the subproject common to multiple agencies? <input type="radio"/> Yes <input type="radio"/> No Can the provided capability be reasonably moved to other sites? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A Is the subproject low in technical risk? <input type="radio"/> Yes <input type="radio"/> No For threat related subprojects, has Crossbow coordination been initiated ? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A Has the O&M requirement been identified and coordinated? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A																																							
Comments as appropriate (use separate page)					Approved as a candidate by OTECC WG on: <div style="border: 1px solid black; width: 100px; height: 15px;"></div>																																							

Figure B-1. REP Nomination Assessment Report

Resource Enhancement Project FYXX Nomination Assessment Report Continuation Sheet	
<div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Name of Subproject</div> <div style="border: 1px solid black; padding: 2px;">Abbreviated Name</div>	
List the documentation that establishes the OT limitation. <div style="border: 1px solid black; padding: 2px; min-height: 20px;">Reference the TEMP, OT planning document or directive that establishes the need for the test capability in support of a scheduled OT and confirms that the test capability is not available.</div>	
Identify correspondence that justifies duplication. <div style="border: 1px solid black; padding: 2px; min-height: 20px;">Reference the document that establishes that the duplication is warranted. A copy of the correspondence must be retained on file by the subproject manager/executing activity.</div>	
List documentation that confirms CROSSBOW coordination. <div style="border: 1px solid black; padding: 2px; min-height: 20px;">Reference the CROSSBOW Committee memorandum that documents the review of the REP candidate subproject. Summarize the conclusions and/or actions required to complete required coordination.</div>	
Document the discussion with the gaining organization regarding O&M. <div style="border: 1px solid black; padding: 2px; min-height: 20px;">Reference the document that summarizes the discussions and conclusions resulting from the coordination with the gaining organization.</div>	
Additional Comments <div style="border: 1px solid black; padding: 2px; min-height: 100px;"> Identify the Senior OTA Manager who was briefed about the subproject. Include short responses to issues pertaining to the subproject. Include the rough order of magnitude estimate for O&M support. Provide the reason for seeking REP funding as opposed to Service funding or funding from an individual acquisition project. </div>	

Figure B-1. REP Nomination Assessment Report
Continuation Sheet

Appendix C

Obligation and Expenditure Plan Preparation

The Obligation and Expenditure Plan (O&E Plan) as shown in Figure C-1 provides essential information regarding the obligation and expenditure planning for funds provided to a given REP subproject. The O&E Plan identifies for a specific fiscal year how the subproject plans to obligate and expend that fiscal year's funding.

The O&E Plan must be prepared by the subproject manager to depict the spending plan for a REP subproject starting the month that funds are received through the month that funds are expected to be fully obligated and expended. With REP funds being two-year funds, the spending plan section of the O&E Plan depicts a two-year period to accommodate both obligations and expenditures for this period.

Subproject progress and activity is generally assessed against the spending plan for the subproject.

Guidelines for preparing the specific sections are as follows:

Administrative Information, Project Schedule, Proposed Budgets, and Impact If Not Funded

This information is extracted directly from the Quad Chart.

Obligation and Expenditure Plan for FYXX

For the initial O&E Plan, the starting point is the month in which funds are expected to be received. The O&E Plan can be subsequently revised based on the month and amount of funds actually received. The O&E Plan should depict the planned monthly obligation and expenditure of that fiscal year's funds from receipt through 100% obligation and expenditure.

PE 0604940D

[illegible]

Appendix D

Subproject Nomination, Review, Approval and Management Process

The following provides a checklist of activities and events, detailed in the body of the Resource Enhancement Project (REP) Planning and Execution Guide (PEG), to be followed in the submittal and subsequent execution of a REP subproject. Identified are the principal participants responsible for that activity.

- Identify and document operational test (OT) shortfall - usually documented in the Test and Evaluation Master Plan (TEMP) for the system in development supported by Service Test Resource, Analysis and Planning (TRAP) efforts. (Operational Test and Evaluation Coordinating Committee (OTECC) Working Group (WG) member)
- Determine solution. (OTECC WG member)
- Ensure proposed subproject meets criteria for REP funding. (OTECC WG member)
- Obtain Operational Test Agency (OTA) and Service/Agency support and identify the Senior OTA Officer who was briefed about the subproject in the Additional Comments section of the Continuation Sheet of the NAR. (OTECC WG member)
- Preparation and submission of Quad Chart, NAR and Obligation and Expenditure Plan (O&E Plan). (For threat related subprojects covered under the purview of CROSSBOW Charter, ensure that coordination with CROSSBOW has been initiated.) (OTECC WG member)
- OTECC WG Service member brings subproject to OTECC WG for consideration. (OTECC WG member)
- Preparation of subproject briefing and presentation to OTECC WG on request. (Subproject manager / OTECC WG member)
- Acceptance or rejection of subproject by OTECC WG. (OTECC WG)
- Accepted subproject is prioritized by OTECC WG and forwarded to the OTECC Principals for consideration. (OTECC WG / OTECC WG Chairman)
- OTECC WG member, supported by the subproject manager, briefs OTECC Principal. (OTECC WG member/Subproject manager)
- Subprojects and WG priorities are reviewed by the OTECC Principals and either accepted, rejected or re-prioritized. (OTECC WG member / OTECC WG Chairman / OTECC Principals)
- Approved subprojects, as prioritized by the OTECC Principals and approved by DOT&E in coordination with DTTSG, receive funding in priority order until all funds are exhausted. (OTECC WG Chairman / OTECC WG member)
- Submission and approval of REP Project Management Plan and Directive. (OTECC WG member / OTECC WG Chairman / OTECC Chairman)

- Issuance of REP Test Package Directive to subprojects funded at \$1M or more in any execution year or \$5M over the life of the subproject. (OTECC WG Chairman / OTECC Chairman)
- Submission and approval of REP Subproject Management Plan. (Subproject manager / OTECC WG member / OTECC WG Chairman / OTECC Chairman)
- Submission of monthly status report that will show the major accomplishments/ milestones achieved, upcoming events, any technical/funding/schedule problems, and actual obligations and expenditures, in accordance with the REP PEG. (Subproject manager/OTECC WG member) Consolidation and submission of report to OTECC, DOT&E, DTSE&E, and designated OSD financial manager. (OTECC WG Chairman)
- Subproject Reviews. Each subproject is reviewed at least twice annually. Once on-site or near the site by the OTECC WG and once by the OTECC Principals in preparation for the Central Test and Evaluation Investment Program (CTEIP) mid-year review. Subproject managers are required to support these reviews by presenting status briefings. (Subproject manager / OTECC WG member / OTECC WG Chairman)
- Notice of anticipated or actual breaches with reports and documentation required by the REP PEG. (Subproject manager / OTECC WG member / OTECC WG Chairman)
- Preparation of End of the Year Report and input to CTEIP and DOTE Annual Reports. (OTECC WG member / OTECC WG Chairman)
- Submission of self assessment report for REP. (OTECC WG Chairman)
- Submission of final report for subprojects meeting the CTEIP \$1M/5M threshold. (Subproject manager / OTECC WG member)

Appendix E

FISCAL YEAR XXXX RESOURCE ENHANCEMENT PROJECT PROJECT MANAGEMENT PLAN AND DIRECTIVE

The Resource Enhancement Project (REP) Project Management Plan and Directive (PMP&D) will be prepared by the OTECC Working Group (WG) Chairman in coordination with the WG and submitted to the OTECC Chairman for approval in response to the Test Package Directive (TPD) issued by the Central Test and Evaluation Investment Program (CTEIP). It will provide the REP structure and will list the subprojects that are approved to receive funding for FYXX, a consolidated subprojects schedule/activities, level of funding, and obligation and expenditure (O&E) summary which constitutes the REP baseline. The PMP&D will contain a signature page, subproject information depicted in the outline below, and a statement of understanding that constitutes a contract between the OTECC and CTEIP Program Manager.

The signature page will contain the following:

Program Element: 0604940D CTEIP

Project Number: V-12-D (Formally 1-12D)

Functional Area: Operational Test and Evaluation

Submitted By: Signature block for the OTECC WG Chairman

Approved By: Signature block for the OTECC Chairman

Date Approved: Date when the document is approved by the OTECC Chairman

Distribution Statement B: Distribution limited to US Government agencies only. Administrative/Operational Use. Other requests for this document must be referred to the OTECC WG Chairman.

The body of the PMP&D will address the topics outlined below. The PMP&D will provide sufficient detail on how the subprojects will be managed/monitored/executed and how resources will be distributed and/or re-allocated. The PMP&D will be updated by page changes to document any changes to the subproject information.

1.0 PROJECT DESCRIPTION

- 1.1 Background
- 1.2 Objectives
- 1.3 Project Structure

2.0 PROJECT DIRECTION

- 2.1 Responsibility
- 2.2 Project Management Interface
- 2.3 REP Management Process

3.0 PROJECT REQUIREMENTS

- 3.1 REP Subproject Execution Schedules
- 3.2 Schedule of Subproject Reviews
- 3.3 Schedule of OTECC/REP Meetings
- 3.4 REP Subprojects Identification and Approval Schedule
- 3.5 Subproject Nomination/Selection Process
- 3.6 Prioritization and Development of REP Subproject Priority List

4.0 PROJECT FUNDING

- 4.1 REP Subproject Budget
- 4.2 Obligation and Expenditure (O&E) of Funds
- 4.3 Allocation and Distribution of Funds
- 4.4 Extension of Funds
- 4.5 Redistribution of Funds
- 4.5 Financial Analysis
- 4.6 Programmatic Funding Guidelines

5.0 OTHER ACTIVITIES

- 5.1 REP Subproject Documentation and Reports
- 5.2 Database Management

Attachment - Quad Charts for each funded subproject

The PMP&D will contain the following statement of understanding:

This Project Management Plan and Directive, along with the Test Package Directive, constitute a project baseline and understanding between the OTECC and the CTEIP Program Manager. The REP subprojects' performance will be measured against the schedule and funding described in this baseline.

Appendix F

RESOURCE ENHANCEMENT PROJECT TEST PACKAGE DIRECTIVE Format and Contents

The Resource Enhancement Project (REP) Test Package Directive (TPD) is prepared by the Director, Operational Test and Evaluation (DOT&E) and forwarded to the Service/ Defense Agency as a requirements document for developing a test capability (funded at \$1M or more in any execution year or \$5M over the duration of the subproject).

The REP TPD will contain the following:

- **Cover Page:**
 - Program Element: 0604940D (CTEIP P.E. Number)
 - Date: (Date TPD is signed) (Initial/Revision #)
 - OTECC Principal / Resource Manager: (Name, organization, address and phone number for current Service / Defense Agency OTECC Principal.)
 - Subproject Name / Abbreviated Name: (Name and abbreviated name are found in the submittal package quad chart.)
- **Subproject Description:** (Taken from the submittal package Quad Chart and briefing. Provides background information, a technical description that will clearly portray what the subproject is, the technical approach to be taken, the required performance characteristics and what must be accomplished to develop the capability. Includes a description of the overall project if the REP subproject is only a portion of the effort.)
- **Subproject Direction:** (Describes how the subproject will be organized/managed/ executed.)
- **Schedule Requirements:** (Provides key milestones for the implementation of the subproject extracted from the submittal quad chart and briefing.)
- **Subproject Funding:** (Provides a funding profile based on the latest approved budget and funds distribution.)
- **Special Instructions:** (Provides instructions for the subproject manager regarding the submission of Subproject Management Plan (SMP), O&E Plan/Spend Plan, and reporting of breach/cost deviation, and other financial, technical, and programmatic status of subproject as described in Sections 4.3.4, 4.3.5, 4.4, 4.5, 4.6, and 4.9 of the REP Planning and Execution Guide (PEG).)

Statement of Understanding: (Includes the statement: “The Subproject Management Plan, along with the Test Package Directive, constitutes a contract between the subproject manager/Executing Activity, the OTECC WG member, the Service/Defense Agency OTECC Principal/Resource Manager, and the OTECC Chairman, in that the Service/Defense Agency OTECC Principal/Resource Manager is ready to take on the subproject as described, and the OTECC is ready to provide funding and accept the subproject manager’s acquisition approach. The requirements statement, technical goals/capabilities, schedule, and funding as stated in the SMP constitute a subproject baseline. Subproject performance will be measured against this baseline.”)

Approved by: (Signature block for the Deputy Director, Operational Test & Evaluation, Resources and Administration)

Appendix G

RESOURCE ENHANCEMENT PROJECT SUBPROJECT MANAGEMENT PLAN

Format and Contents

This appendix provides the format and contents guidance for the Resource Enhancement Project (REP) Subproject Management Plan (SMP). The SMP will provide the subproject description, identify the procedures, methods, and technology that will be used to develop or acquire the needed test capability, identify required funding, spending plans, the milestone schedule, and describe how the subproject will be managed and executed.

The SMP will be prepared in a concise yet complete manner and should not exceed 20 single-spaced pages. It should be prepared considering the guidance addressed below and in the REP SMP Checklist, Appendix H of the REP Planning and Execution Guide (PEG).

Appendix H provides a questionnaire to assist the subproject manager in preparing and assessing the completeness of the SMP.

The SMP should be submitted to the OTECC Chairman for approval within 60 days from approval of the Test Package Directive (TDP). It should be submitted by the subproject manager, with the concurrence of the OTECC WG member and Service/Defense Agency OTECC Principal/Resource Manager. An electronic copy of the SMP will be provided to the OTECC WG Chairman within 10 days from receipt of the approved SMP. The electronic copy can be provided via electronic mail or 3.5" PC formatted floppy disk. The approved SMP will constitute a contract between the Service/Defense Agency and the Director, Operational Test and Evaluation (DOT&E) documenting the manner by which subproject execution will occur.

The SMP will contain the following.

(1) **COVER PAGE:** This page will include:

- **Header:** The header will be:

RESOURCE ENHANCEMENT PROJECT SUBPROJECT MANAGEMENT PLAN

FOR

(NAME OF SUBPROJECT)

(Use the subproject name in the REP Test Package Directive)

- **Logo** (if any)
- **Prepared by:** (Name of organization and Service/Defense Agency having management responsibility for the subproject.)
- **Document Date:** (Date submitted by the REP Subproject Manager)
- **Document Number / Initial Submission / Revision Number:** (if any)

(2) **SIGNATURE PAGE:** This page will include:

- **Subproject Name:** (The same as the cover page.)
- **Date:** (The same as the cover page.)
- **Document Number / Initial Submission / Revision Number:** (The same as the cover page.)
- **Executing Activity / Service or Defense Agency:** (The same as the cover page.)
- **Submitted By:** Signature block for subproject manager (Include phone, facsimile and electronic mail (e-mail) address of the subproject manager)
- **Concurred In:** Signature block for OTECC Working Group member (Include phone, facsimile and e-mail address of the WG member)
- **Date:** (Date block when the document was concurred in by the OTECC WG member)
- **Concurred In:** Signature block (Include phone, facsimile and e-mail address of the OTECC Principal/Resource Manager)
- **Date:** (Date block when the document was concurred in by the Principal/Resource Manager)
- **Approved By:** Signature block for OTECC Chairman
- **Date Approved:** (Date when document was approved by the OTECC Chairman)

(3) **TABLE OF CONTENTS** (with page numbers)

(4) **LIST OF FIGURES AND TABLES** (if any)

(5) **BODY:** The body of the document will include and address the following sections:

1.0 SUBPROJECT DESCRIPTION (1 - 4 pages): This section will provide background information, technical description that will clearly portray what the subproject is, technical approach, and what must be accomplished to develop the capability. This must relate to the subproject description in the REP Subproject Quad Chart.

1.1 Background

1.2 Technical Description and Approach

1.3 Operational Tests to be Supported

1.4 Subproject Status (if this a continuation of last FY effort)

2.0 CRITICAL / KEY ISSUES (1 - 3 pages): This section will include issues involved in developing and implementing the subproject and should address the following:

2.1 Issues/Problems

2.2 Other External Factors

3.0 MANAGEMENT APPROACH (4-6 pages): This section will describe how the subproject manager will allocate resources and manage the subproject. This section will include the following:

- 3.1 Subproject Organization**
- 3.2 Management Interface**
- 3.3 Technical Management**
- 3.4 Risk Management**
- 3.5 Acquisition Strategy**
- 3.6 Cost Control**
- 3.7 Activation**

4.0 FUNDING (2 - 4 pages): This section will describe the funding resources required to implement the subproject and a plan as to how they are projected to be obligated and expended. It includes the following:

- 4.1 Funds Required**
- 4.2 Obligation and Expenditure (O&E) Plan**
- 4.3 Shared Funding**

5.0 SCHEDULE (2 - 4 pages): This section will provide the scheduling information required by the subproject manager to efficiently schedule all subproject activities, measure progress, correct slippage, and report deviations from the schedule. The SMP schedule should be consistent with that in the REP Subproject documentation. The following is required:

- 5.1 Milestone Chart**

STATEMENT OF UNDERSTANDING

The Subproject Management Plan, along with the Test Package Directive, constitutes a contract between the subproject manager/Executing Activity, the OTECC WG member, the Service/ Defense Agency OTECC Principal/Resource Manager, and the OTECC Chairman, in that the Service/Defense Agency OTECC Principal/Resource Manager is ready to take on the subproject as described, and the OTECC is ready to provide funding and accept the subproject manager's acquisition approach. The requirements statement, technical goals/capabilities, schedule, and funding as stated in the SMP constitute a subproject baseline. Subproject performance will be measured against this baseline.

(6) LIST OF ACRONYMS - List all nomenclatures/acronyms and what they stand for.

Appendix H

RESOURCE ENHANCEMENT PROJECT

Subproject Management Plan Checklist

This checklist complements the Subproject Management Plan (SMP) Format and Contents, Appendix G of the Resource Enhancement Project (REP) Planning and Execution Guide (PEG), and should be used by the subproject manager in preparing and evaluating the completeness of the SMP.

COVER PAGE	YES	NO	N/A
Did you include the header, logo, name of Service/Agency/organization that has management responsibility for the subproject, document date and number in the cover page?			
SIGNATURE PAGE	YES	NO	N/A
Did you prepare and include a signature page? (The signature page should include the subproject name, date of document, document number/revision, name of subproject manager, OTECC WG member, OTECC principal, OTECC Chairman, dates when they were signed, and when document was approved.			
TABLE OF CONTENTS	YES	NO	N/A
Did you provide the table of contents?			
LIST OF FIGURES AND TABLES	YES	NO	N/A
Did you incorporate the list of figures and tables, if any?			
1.0 SUBPROJECT DESCRIPTION: (1-4 Pages)			
1.1 Background:	YES	NO	N/A
Did you provide enough background information or specify the need or requirement for this subproject?			
Did you provide information regarding the related studies and analyses that were used in determining the concept/approach for this subproject?			
Did you address the critical operational issues and criteria?			
Did you describe the milestone decisions that will be impacted?			
Have you described how the performance characteristics would relate to satisfying the current/long-term operational test requirements?			

Have you described the feasibility of transporting or replicating the capability at other test locations?			
Did you provide information as to how many units will be needed, why is it needed, and where will they be located?			
Have you described the impact to the program(s) to be supported if this capability is not available?			
Have you provided the rationale as to why you are requesting REP funds to procure/develop/test this capability?			
1.2 Technical Description and Approach:	YES	NO	N/A
Have you provided the technical and performance characteristics of this subproject?			
If REP is funding but a portion of a larger project: a) Has the description of the entire project been provided? b) Did you provide specific detail as to what is being developed or acquired with REP funds?			
Did you describe the key hardware and software interfaces to be used in developing the capability or the interface that will be required with other systems or capabilities?			
Does the technical description of the subproject match the technical description in the TPD? If not, did you provide the reasons why?			
Did you include name of organization/company and location where the capability is being developed?			
Did you specify the deliverables and what is to be accomplished for this fiscal year of REP funding?			
1.3 Operational Tests to be Supported:	YES	NO	N/A
Did you identify the programs and operational tests (OTs) that will be supported?			
Did you identify the ACAT of the programs to be supported?			
Did you identify the type of Ots to be supported?			
Did you identify the test date of the OTs to be supported?			
Do the programs and OTs to be supported match the REP Quad Chart?			

1.4 Subproject Status (if this is a continuation of last FY effort):	YES	NO	N/A
Did you describe what has been procured, developed or accomplished using the funding from the previous year(s)? (This could be combined with Section 1.2.)			
Did you describe what test had been completed and major milestones that were accomplished using the funding from the previous year(s)?			
Did you provide the current status (work in progress) of this subproject?			
Did you describe the tasks to be performed/accomplished using the current year funding for this subproject? (Note: This could be omitted if information has already been provided in Section 1.2)			
2.0 CRITICAL / KEY ISSUES (1 - 3 pages):			
2.1 Issues/Problems:	YES	NO	N/A
Did you address the issues/problems (current or anticipated) that may impact the development of this capability?			
Did you address potential risk areas that may be critical to the overall subproject performance?			
Did you provide recommendation/workarounds/solutions that are required to resolve the problems or potential issues?			
2.2 Other External Factors	YES	NO	N/A
Does the subproject depend on completion of other related efforts, such as separately funded construction, availability of test resources, pending legislation, etc.? If yes, did you provide this information in the SMP?			
Does the subproject depend on the availability of GFE/GFM from other Services/Agencies/organizations? If yes, did you describe in the SMP what GFE/GFM will be required, and when will they be available, and who will be providing them? (Note: Funding of transport/refurbishment of GFE/GFM are included in Section 3.5)			
Are there any environmental issues? If yes, did you provide this information in the SMP?			

3.0 MANAGEMENT APPROACH : (4-6 pages)			
3.1 Subproject Organization:	YES	NO	N/A
Did you indicate the name of the organizations (Service, Defense Agency, and contractors) that are involved in developing this capability?			
Did you describe the responsibility/participation/involvement of Services, Defense Agencies, and contractors in the execution of the subproject?			
Did you identify the subproject manager?			
Did you identify the financial point of contact?			
3.2 Management Interface:	YES	NO	N/A
Did you describe how communications and coordination between Services, DoD Agencies, other organizations, and contractors would be done?			
Did you describe if there are procedures or formal agreements that have been instituted for coordination and resource sharing with other Services, Defense Agencies, other organizations, and contractors?			
Does any dependency or relationship exist with other REP subprojects and/or CTEIP projects? If yes, did you provide the details on how communications and coordination with other subprojects/projects will be performed?			
Did you describe how the subproject status, technical and funding issues, and deviations from the schedule would be reported to OTECC?			
3.3 Technical Management:	YES	NO	N/A
Did you identify the Service, DoD Agency, government organization or contractor that will have the technical management responsibility?			
Did you describe the specification control procedures?			
Did you address how the performance baseline, configuration, and technical documentation will be monitored or maintained?			
Did you address what measures are being taken to ensure compliance with DoD open systems architecture requirements?			
Did you describe if any technical/design reviews will be conducted and how often?			

3.4 Risk Management:	YES	NO	N/A
Did you indicate the technical risk and other risk elements involved in the subproject?			
Did you include the contingency plan if risk elements are involved?			
Did you identify the objectives established and methods to continuously assess risks?			
Did you describe how risks would be mitigated?			
3.5 Acquisition Strategy:	YES	NO	N/A
Is there an acquisition plan? If yes, did you describe the process and contract management approach? Have you identified who approves the acquisition plan?)			
Have you identified every contract(or) associated with this subproject, to include contract type and period of performance?			
Did you describe the portion of the effort to be performed in-house and the work to be done by the contractor?			
Is there a plan for making available any GFE/GFM to contractors?			
Did you provide information if you will be acquiring any GFE/GFM from other Services/Agencies or organizations? (Note: This could be omitted if information is already provided in Section 2.2.)			
Did you identify who will fund the transport, refurbishment, and tracking of GFE/GFM?			
3.6 Cost Control:	YES	NO	N/A
Did you include the program cost control function? If one has not been established, did you describe the process on how this will be done?			
Did you address how cost/performance/schedule will be tracked/monitored/measured against baseline performance and reported to OTECC?			
3.7 Activation:	YES	NO	N/A
Did you include the test assets and resources that are required to test, demonstrate, and certify the capability?			

Did you describe how the subproject will be transitioned to full operational capability?			
Did you provide information or document the coordination with the receiving agency/organization that will have the responsibility for sustained operation and maintenance (O&M) of the capability?			
Did you include estimates for O&M or follow-on funding in the event that continued use of the capability is required or additional quantity is needed to satisfy the OT requirements?			
4.0 FUNDING: (2 - 4 pages)			
4.1 Funds Required:	YES	NO	N/A
Have you included the REP funding required, by fiscal year through subproject completion, for in-house contracts and other supporting organizations?			
<p>Did you provide a funding breakdown, by fiscal year, for the following level of effort, i.e., a spend plan?</p> <ul style="list-style-type: none"> • Subproject management (list all the government organizations and contractors and include amount to be provided). • Design/engineering (include amount to be allocated for design, analysis, test, integration, and installation for in-house and contractors). • Fabrication/equipment (list HW/SW to be developed/procured; include amount to be allocated for each HW/SW element (for in-house and contractors)). • Construction (Special funding documents must be submitted). • Activation. 			
Did you clarify if the funds required (for each breakdown /level of effort identified above) will be apportioned in the O&E plan as monthly/bi-monthly/quarterly/yearly, etc. This will explain the spike or any unusually high expenditure in the O&E during the execution of this fiscal year's funds.			

4.2 Obligation and Expenditure (O&E) Plan:	YES	NO	N/A
Did you include a monthly forecast of all obligations and expenditures (up to 100% obligations and expenditures) for the current fiscal year REP funds? (Note: This should be the same as the O&E plan included in the REP subproject documentation. If there is a change, did you annotate and provide explanation?)			
Is the O&E plan consistent with the REP subproject documentation?			
If there is a change in the O&E, did you annotate and provide explanation?			
Did you provide actuals for previous year(s) O&E (if this is a continuation of last FY effort)?			
4.3 Shared Funding:	YES	NO	N/A
For projects requiring shared funding, did you identify the amount, source, type, and purpose?			
Does the amount of the shared funding provided in this SMP matches the amount in the REP Quad Chart? If not, did you clarify why?			
Did you provide the reasons for the shared funding and the results to be achieved from the different funds, including REP funds?			
Did you explain how the funding from the different sources is integrated into the subproject plan as well as how interdependency issues maybe avoided?			
Is there any impact to the subproject effort and schedule if any portion of the shared funding is withdrawn? (If impact will be a key/critical issue, this could be addressed in Section 2.3)			

5.0 SCHEDULE: (2 - 4 pages)			
5.1 Milestone Chart	YES	NO	N/A
<p>Have you included a milestone chart (not a bar chart) with standard symbols and list applicable milestones such as—</p> <ul style="list-style-type: none"> • Subproject initiation • Requirements definition/Concept definition • DRFP/RFP release (if any) • Major contract awards (if any) • Requirements/design reviews (SDR, PDR, CDR, FCA/PCA) • Fabrication/integration/installation/construction • Acceptance testing • Operational capability (OC) • Full operational capability (FOC) • Other scheduled subproject reviews and major decision points 			
Does the milestone match the schedule reflected in the Quad Chart and TPD?			
If the milestone does not match the schedule reflected in the TPD, did you provide explanations for the change in schedule?			
Will the schedule support the OTs mentioned in Section 1.3?			
Is the subproject executable and can attain OC on the proposed schedule with the funds identified?			
If this is a continuation of last FY effort, did you maintain key milestones across SMP updates and include estimated as well as actual date of completion?			
If this is a continuation of last FY effort and you did not maintain key milestones across SMP updates, did you provide explanations for variations and slippage in the schedule?			
If this is a continuation of last FY effort and you did not maintain key milestones across SMP updates, did you provide recommendations/workarounds if OTs to be supported were impacted?			
STATEMENT OF UNDERSTANDING	YES	NO	N/A
Did you include the statement of understanding?			
LIST OF ACRONYMS	YES	NO	N/A
Did you list all nomenclatures/acronyms and what they stand for?			

Appendix I

REP MONTHLY REPORT FORMAT

This form will be used by the subproject manager in reporting the actual obligation/ expenditures/accruals/disbursements, the major accomplishments/milestones achieved during the preceding month, as well as, the upcoming events, any technical/funding/ schedule problems, any deviations from the subproject baseline, and any action/decision required.

REP MONTHLY REPORT For Month Ending _____

SUBPROJECT NAME: _____

FISCAL YEAR	FUNDS RECEIVED	OBLIGATED	ACCRUED	DISBURSED	EXPENDED (ACCR+DISB)
(Indicate	(Indicate the	(Indicate total	(Indicate total	(Indicate total	(Total of accrued
Fiscal	amount of	amount obligated	amount accrued	amount disbursed	and disbursed
Year)	funds received)	to date)	to date)	to date)	amounts to date)

MONTHLY ACTIVITIES: (Provide summary of activities or status of work in progress.)

MAJOR ACCOMPLISHMENTS: (Describe work accomplished, problems encountered/resolved, milestones achieved, contract awards.)

UPCOMING EVENTS: (Provide upcoming events/milestones. Include the work to be accomplished. . Include significant meetings or important events that could impact work schedule or execution of contract.)

PROBLEMS/RECOMMENDED SOLUTIONS: (Describe any technical/schedule/ funding problems/issues or risk areas. Provide rationale/cause for slippage, deviations from plans (if any). Include recommended solution to resolve problems/issues.)

FINANCIAL EXECUTION: (Describe contract performance/funding status. Include explanation if O&E deviate more than 10% from the O&E plan provided in the PMP&D/SMP.)

ACTIONS / DECISIONS REQUIRED: (Include requests for actions/decisions and indicate name/organization that will provide required action/resolution/decision.)

Subproject Manager: (Signature Block) Telephone: _____

Financial Manager: (Signature Block) Telephone: _____

Appendix J

RESOURCE ENHANCEMENT PROJECT SELF ASSESSMENT REPORT

The self assessment report will be prepared by the OTECC Working Group (WG) Chairman for submission to the Central Test and Evaluation Investment Program (CTEIP) Program Manager (PM) on an annual basis. It will be based on the monthly reports and financial status of the subprojects submitted by the OTECC WG members. This report will provide the CTEIP PM with a practical level of understanding on REP's overall (technical and financial) status.

PERFORMANCE:

- Provide the technical status of the project. Describe significant events. Describe any technical problems, what caused the problem, and the corrective action. Describe the impact to the total project in terms of cost, schedule, and tests to be supported. Describe the course of action and the amount of time taken (to be taken) to correct the problem.

FUNDING:

- Describe if the project is obligating/expending funds according to plan. If not, provide the reason for variance. Describe the action taken (to be taken) to meet the goal.
- Describe trends that may project cost overruns.

SCHEDULE:

- Describe if the project is on schedule. If not, provide reason for the schedule slip. Explain changes/deltas to the original schedule (baseline). Describe action taken (to be taken) to meet schedule baseline and provide a revised schedule.

Appendix K

RESOURCE ENHANCEMENT PROJECT (NAME OF SUBPROJECT) Final Report

The outline below is provided to assist the subproject manager in preparing the Final Report. This report will be submitted to the OTECC WG Chairman for forwarding to the OTECC 90 days after the completion of the subproject.

- **Description of Final Capability:**
 - Performance
 - Technical
- **Gaining Organization:**
 - Identify the gaining organization. Include point of contacts with complete address and phone numbers
 - Funding Plan for sustained operation/additional item procurement (if appropriate)
 - Identify where funds are being obtained
- **Funding Profile**
 - Provide REP funding profile by fiscal year. Include actual Obligations and expenditures
- **Funds Distribution:**
 - Identify how REP funds were distributed for each fiscal year.
 - Specify Government organizations or Contractors
 - Include Contractor name, type of contract, actual cost to include fees (if any)
 - Provide POCs (Government and Contractor oversight agency (COTR) with complete address and phone numbers)
 - Provide geographical location where work was performed
- **Lessons Learned:**
 - Provide and describe lessons learned (i.e., problems encountered and how they were resolved) related to:
 - Overall Planning
 - Execution
 - Transition

Subproject Manager: (Signature Block)

Date: (Date Block)

OTECC WG Member: (Signature Block)

Date: (Date Block)

Appendix L

LIST OF ACRONYMS

BMDO	Ballistic Missile Defense Organization
CDR	Critical Design Review
COI	Critical Operational Issue
COIC	Critical Operational Issue and Criteria
FOT&E	Follow-on Operational Test and Evaluation
CTEIP	Central Test and Evaluation Investment Program
DDDR&E(T&E)	Deputy Director, Defense Research and Engineering (Test and Evaluation)
DIA	Defense Intelligence Agency
DISA	Defense Information System Agency
DRFP	Draft Request for Proposal
DOT&E	Director, Operational Test and Evaluation
DT&E	Director, Test and Evaluation
DTSE&E	Director, Test, Systems Engineering and Evaluation
DTTSG	Defense Test and Training Steering Group
FCA	Functional Configuration Audit
FMU	Foreign Materiel Utilization
FOC	Full Operational Capability
FOT&E	Follow on Operational Test and Evaluation
FY	Fiscal Year
GFE	Government Furnished Equipment
GFM	Government Furnished Material
HW	Hardware
IOC	Initial Operational Capability
IOT&E	Initial Operational Test and Evaluation
JITC	Joint Interoperability Test Command
MDAP	Major Defense Acquisition Programs
MOU	Memorandum of Understanding
NAR	Nomination Assessment Report
O & E	Obligation and Expenditure
O & M	Operation and Maintenance
OSD	Office of the Secretary of Defense.
OT	Operational Test
OT&E	Operational Test and Evaluation
OTA	Operational Test Agencies
OTECC	Operational Test and Evaluation Coordinating Committee
OUSDA(A&T)	Office of the Under Secretary of Defense (Acquisition and Technology)
PCA	Physical Configuration Audit

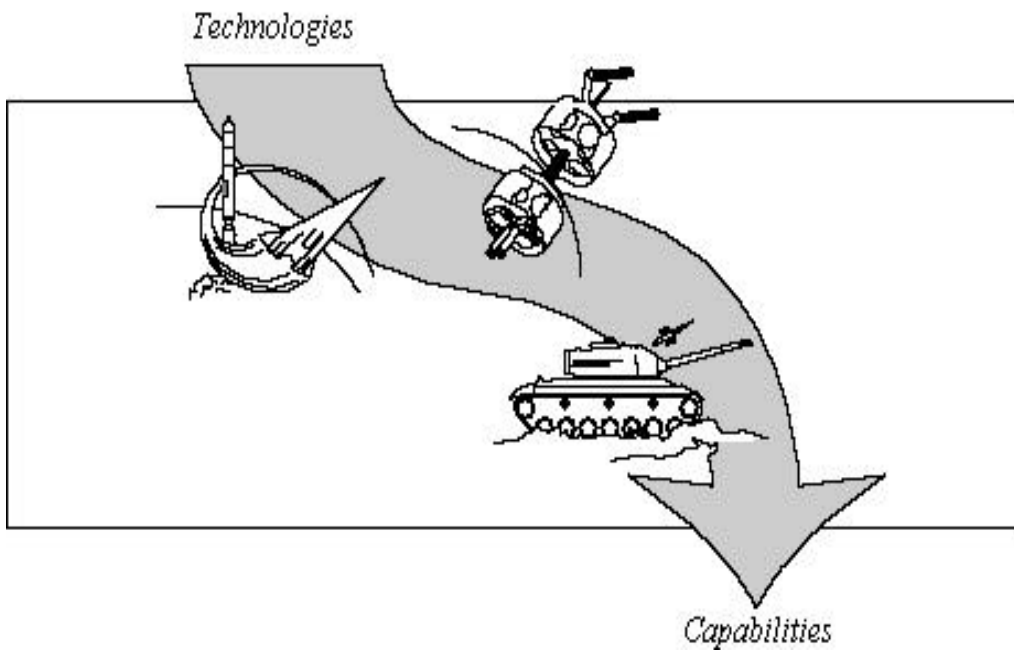
PDR	Preliminary Design Review
PEG	Planning and Execution Guide
PM	Program Manager
PMP&D	Project Management Plan and Directive
POC	Point of Contact
RAMIS	REP Automated Management Information System
REP	Resource Enhancement Project
RFP	Request for Proposal
ROM	Rough Order of Magnitude
SMP	Subproject Management Plan
SW	Software
T&E	Test and Evaluation
TEMP	Test and Evaluation Master Plan
TERC	Test and Evaluation Resource Committee
TFR	Test Facilities and Resources
TPD	Test Package Directive
WG	Working Group

ANNEX N

TEST TECHNOLOGY DEVELOPMENT AND DEMONSTRATION PROJECT PROCEDURES MANUAL

The Test Technology Development and Demonstration Project Procedures Manual is included in its original format and pagination as Enclosure 1 to this Appendix.

TEST TECHNOLOGY DEVELOPMENT AND DEMONSTRATION PROJECT PROCEDURES MANUAL



CENTRAL TEST AND EVALUATION INVESTMENT PROGRAM

December 1998

Forward

This manual is issued under the authority of the Deputy Director, Test, Systems Engineering and Evaluation for Resources and Ranges. It provides policy guidance and procedures to be used in support of the Test Technology Development and Demonstration (TTD&D) project within the Central Test and Evaluation Investment Program (CTEIP), Program Element (PE) 060494D. Funds provided by Congress under this PE provide for investment in Department of Defense test and evaluation capabilities.

This manual applies to the Military Services, Defense Agencies, Office of the Secretary of Defense (OSD), Joint Staff, Unified and Specified Commands, and Office of the Inspector General of the Department of Defense. As used in the Manual, the term “DOD Components” refers to all of the foregoing; “Military Services” refers to the Army, Navy, Air Force, and Marine Corps.

This Manual is effective immediately and its procedures shall be used by all DOD Components. Copies of this Manual may be obtained from the World Wide Web site at <http://www.acq.osd.mil/te/programs/cteip/index.html>

CHAPTER 1 GENERAL INFORMATION

A. PURPOSE

This Manual provides policy guidance and procedures to be used in support of PE 0604940D, "Central Test and Evaluation Investment Program (CTEIP)", applicable to all sub-projects proposed and funded under the Test Technology Development and Demonstration (TTD&D) Project. It outlines procedures for submitting candidate sub-projects for approval and funding, as well as the selection procedures and reporting requirements for those projects.

B. BACKGROUND

The Department of Defense constantly updates its warfighting inventory with new and modified weapon systems and equipment. Often, as budgets are reduced and performance expectations of those warfighting systems increase, it becomes increasingly difficult to conduct testing, both developmental and operational, as well as training and doctrine development, in the use of those systems. The Department of Defense must look to technology to mitigate these increased risks.

The technologies developed under the Military Service/Defense Agency 6.1, 6.2 and 6.3 programs (see Appendix A for definitions) for weapons systems, or equivalent government or commercial research and development programs, are often directly applicable to improvements in the Department's ability to test and evaluate those weapons systems, as well as train on and develop tactical applications for, those systems. The Test and Evaluation Resource Committee (TERC), as one of the chartered working committees under the Defense Test and Training Steering Group (DTTSG), established the TTD&D Project to plan facilitate the transition of technology from laboratories to enhance developmental test (DT) capabilities. Another goal of TTD&D is to optimize technology applicability of investments for use throughout the life cycle of these new or updated weapons systems.

C. TTD&D PROJECT STRUCTURE

The TTD&D project encompasses a number of sub-projects each year. Each year, approximately \$6 - \$8 million dollars are set aside within CTEIP to fund the TTD&D project. Each sub-project is generally limited to \$500,000 per year for up to a 3-year tenure to develop and demonstrate the benefit of the technology transition. This project was originally established to act as the source of future developments of capabilities within CTEIP, i.e. fulfilling a documented T&E shortfall. TTD&D has also recently been focused by the TERC into looking for new ways to test more efficiently and/or effectively, as well as investing in risk mitigation for known capabilities shortfalls.

Annually, the TTD&D Working Group conducts a series of meetings to discuss candidate projects for inclusion in the next fiscal year's project. Each project is reviewed annually by the TTD&D Review Panel to ensure continued investment in on-going projects is the most effective application of TTD&D resources. That process is described in detail in Chapter 2. The TTD&D project closely follows the other CTEIP projects in management and oversight controls.

CHAPTER 2

TTD&D PROJECT PROCEDURES

A. MANAGEMENT RESPONSIBILITIES

The CTEIP Program Element Manager has overall responsibility for this project, including issuing policy guidelines and direction, administration of the TTD&D project, and chair of a Working Group (composed of lead coordinators described below) of the Services, Defense Agencies, DTSE&E and DOT&E, and designation of a TTD&D Project Director. The TTD&D Project Director oversees project day-to-day activities and provides specific direction annually via the Test Package Directive (TPD). The Project Director develops the Project Management Plan (PMP) from the inputs generated by the subproject leads, coordinated through each Service/Agency lead coordinator.

Each Service/Agency has a lead coordinator for the subprojects managed under that Service/Agency. The lead coordinators are the primary points of contact for the TTD&D Project Director to ensure proper planning and execution of each subproject. Technical Leads, also identified on each subproject, will lead the technology application efforts and report execution to each Service/Agency lead coordinator and OSD. Each Service/Agency lead coordinator will review the monthly execution reports from the subproject technical leads and report updated status (financial, technical plans and accomplishments, and schedule/milestone) to OSD, if required. Each Service/Agency lead coordinator also submits prioritized TTD&D proposals in response to OSD's annual TTD&D call letter and coordinates final T&E and disposition reports from the subproject technical leads on technologies developed and demonstrated under this program. The final disposition report will include a summary of the testing conducted, the results of the tests, and the status of related decisions regarding the implementation of test support.

B. MANAGEMENT OF CRITICAL/KEY ISSUES

Subproject execution based on an annual plan approved by the TERC is the primary goal of the TTD&D Project Director. Subprojects will be continuously reviewed for their potential to enhance T&E, as well as synergistic benefit of sub-projects to other CTEIP programs, or to instrumentation projects underway within the DT/OT/Training/ Warfighting communities. During each year, as well as at the completion of each subproject, a determination of its applicability to T&E/training/warfighting will be made. The TTD&D Project Director will recommend to the CTEIP Program Element Manager continuation of the subproject development under Service/Agency guidance; continuation of the subproject under TTD&D as a "risk reduction" development until a confirmation of the technology fulfilling of a validated T&E need can be made and therefore can be continued as a Joint Improvement and Modernization project of the CTEIP program; determine that the subproject has been completed successfully and that no further benefit to the T&E community can be derived; or recommend that the technology being

developed under a TTD&D subproject no longer holds any promise of significant enhancement in T&E capability and the effort should terminate before completion.

C. PROJECT SCHEDULE

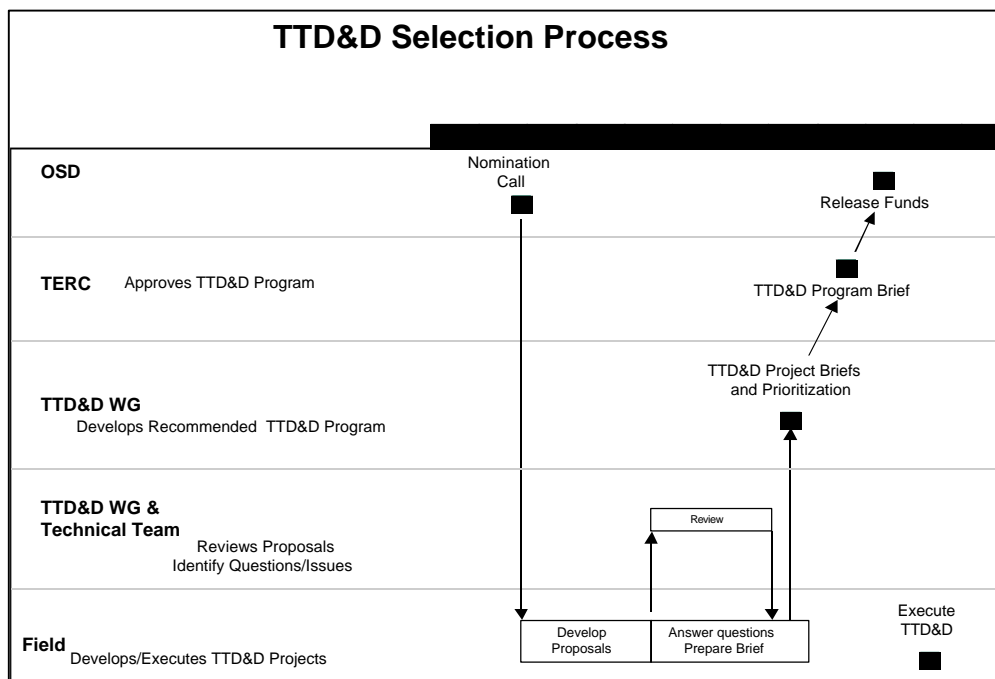
TTD&D SUBPROJECT EXECUTION

Each TTD&D subproject maintains its own schedule and milestones, and ensures they are listed on each subproject's monthly execution report.

Each subproject technical lead is required to provide monthly execution reports for their projects, and a mid-year execution review, which will be scheduled in advance of the annual CTEIP Mid-Year Review. The TTD&D Mid-Year Execution Review may be accomplished in a group setting, or by Service/Agency, or individually as may be appropriate as determined by the CTEIP Program Element Manager or the TTD&D Project Director. Briefing formats will be provided in advance of each Review to ensure key interest items to the CTEIP Program Element Manager are captured each year.

TTD&D SUBPROJECT NOMINATION/EVALUATION/SELECTION PROCESS

The Military Services and Defense Agencies are the primary source of TTD&D proposals, and they must ensure that all proposals are submitted using the procedures explained below. Due to the importance of the TTD&D Project, a formal selection process is used. A graphical depiction of the process is shown in the figure below.



Developing and maintaining proper guidelines for evaluating new candidate projects is the

foundation of the success of the TTD&D Project. The guidelines for evaluating TTD&D subprojects is based on an in-depth understanding of national T&E/Training/Warfighting priorities, DOD guidance and policy, evolving technologies focused on T&E/Training/Warfighting, and current and future T&E/Training/Warfighting capabilities as forecast by DOD and Service/Agency acquisition programs. The TTD&D project provides the potential for improvements to DOD T&E projects to meet the challenges of testing and training/employment of future weapons systems.

TTD&D project goals and specific guidelines will be identified in the annual proposal call letter, usually issued in the February time frame of each fiscal year, calling for projects to begin in the next fiscal year. It will address issues such as interoperability, applicability, efficiency/effectiveness, benefit to more than one Service or Agency, manpower savings, and schedule. The methodology reviews both the categories and specific evaluation criteria and will enable the development of recommendations to revise the criteria. The goals and guidelines also ensure current input is received from Major Range and Test Facility Base (MRTFB) testing and training needs, DTSE&E and Director, Operational Test and Evaluation (DOT&E) policy and guidance directives, and Service/Agency working groups (such as the TERC, Training Instrumentation Resource Investment Committee (TIRIC), Joint Targets Oversight Committee (JTOC) and Range Commander's Council (RCC)).

PRIORITIZATION & DEVELOPMENT OF TTD&D SUBPROJECT PRIORITY LIST

The proposal analysis and ranking process requires extensive engineering analysis of the candidate subprojects, using the criteria developed for the current year. This process begins with the DTSE&E/RR call letter to the Services/Agencies. The letter establishes the overall context for the current year's TTD&D Project by highlighting areas of special interest for technology improvements, based on DOD instrumentation needs or DOD initiatives.

Specific selection criteria and changes from the previous TTD&D cycle guidance are identified within the call letter. In addition, the call letter establishes the point of contact for technical issue resolution. These communication interfaces are key elements in facilitating the development of meaningful proposals and expedites the proposal pre-screening process.

An initial screening conducted by TTD&D Project Director and his/her staff of the candidate subprojects ensures the set of proposals are complete and in general compliance with TTD&D guidance and priorities as stated in the call letter. This initial screening also ensures a complete understanding of the technology being pursued and its potential benefit to the testing and training communities. Proposals needing further information to be complete in the consensus opinion of the appropriate Service/Agency lead coordinator and the TTD&D Project Director will be returned to the Technical Lead for further development. Proposals are also carefully considered to see if the technology development would be more appropriately funded by another

organization. All proposals passing through this initial screening will be included in the final evaluation phase. A summary assessment, detailing the compliance of each subproject with the call letter's stated goals, is used to document the results of each subproject's initial screening.

During the evaluation phase, a comprehensive analysis is conducted by the TTD&D Project Director and the Service/Agency lead coordinators to compare and rank the competing candidate sub-projects. For each TTD&D project goal identified within the call letter, a specific ranking of the evaluation of each subproject is completed. An initial identification of the advantages and disadvantages of each proposal is done. Costs and risks are carefully assessed as part of this process. The TTD&D Project Director's staff develops a table evaluating each subproject's compliance with the criteria identified within the call letter. Based on comparative information derived against each of the criteria, candidate subprojects are given a ranking by vote of each Service/Agency lead coordinator and TTD&D Project Director. Based upon the TTD&D budget and the funding required for each candidate subproject, the top subprojects are then recommended to the TERC for inclusion within the next year's CTEIP Program.

The final subproject proposal selection is the responsibility of the CTEIP Program Element Manager and the TERC, who review TTD&D Project Director's recommended TTD&D Project list for the next year. After approval by the TERC, the TTD&D Project Director will notify Service and Agency Lead Coordinators that their subproject proposal was selected for funding and to proceed with their proposal plan.

NOMINATION OF OUT-OF-CYCLE CANDIDATES

The review and approval for out-of-cycle TTD&D candidates shall be managed on a case-by-case basis, conforming to the basic structures as described in this chapter.

TTD&D PROPOSAL FORMAT

The sponsoring DOD Component or Military Service shall prepare a proposal for each candidate subproject. Normally, a proposal should not exceed five single-spaced, typed pages, excluding any attached background information (e.g., brochures, photos, etc.) and briefly address all items. If information on a particular item is not applicable or available, so indicate. A sample proposal format is contained in Appendix B.

D. FUNDING

TTD&D SUBPROJECT BUDGET

The TTD&D funding line is part of the total CTEIP program element.

Initial funding for each subproject is provided to the lead Services/Agencies after the budget for the new fiscal year has been finalized, but no earlier than 1 October of the new fiscal year. Subsequent funding allocations, if required, will be made following receipt of program execution reports detailing accrued subproject obligations/expenditures measured against

subproject obligations/expenditures plans.

OBLIGATION AND EXPENDITURE (O&E) OF FUNDS

Each subproject will have a spreadsheet maintained by the TTD&D Project Director that details that subproject's obligation/expenditure plan. Subproject execution will be validated on a monthly basis by submission of the same spreadsheet annotated with actual or accrued information. If obligations and expenditures are not occurring as planned, the subproject will be reviewed by the TTD&D Project Director and CTEIP Program Element Manager, working in coordination with the Service/Agency Lead Coordinator and TERC, for rationale of slow execution and possible reprogramming of TTD&D funding.

Changes to a subproject's obligation and expenditure plan will be documented in writing by the subproject technical lead and validated by the Service/Agency lead coordinator. Changes should be based on situations/conditions necessitating a "re-baselining" of the subproject and not specifically due to poor execution.

ALLOCATION AND DISTRIBUTION OF FUNDS

The funding provided by OSD to each Service/Defense Agency via direct allotment would then be distributed to the subproject executing TTD&D activities. OSD will issue funds on an appropriate funds distribution document in accordance with the amounts specified and authorized by the TTD&D Project Director and the CTEIP Program Element Manager.

Subprojects with lagging obligation and/or expenditure rates or with other difficulties that alter their fiscal year requirements, may have their funding profile decreased by OSD at the recommendation of the TTD&D Project Director in coordination with the appropriate Service/Agency lead coordinators. The CTEIP Program Element Manager and the TERC will approve any changes to the funding for a subproject.

FINANCIAL ANALYSIS

The TTD&D Project Director will actively review technical progress and perform regular cost analysis and financial assessments of the TTD&D subprojects under execution. The TTD&D Project Director will coordinate a mid-year review of each of these subprojects in advance of the CTEIP Mid-Year Execution Review.

E. DOCUMENTATION

TTD&D SUBPROJECT DOCUMENTATION AND REPORTS

For each TTD&D funded subproject, the subproject's technical lead will submit to its Service/Agency lead coordinator for forwarding to the TTD&D Project Director, an Excel spreadsheet file containing an obligation and expenditure plan, including projected milestones for accomplishment within that year. The subproject technical lead will provide monthly updates to that spreadsheet which will include his/her subproject's obligation/expenditure plan, a monthly accrued obligation/expenditure report, accomplishment of schedule/milestones against the planned, and subproject highlights and plans for the next reporting period. These reports must then be consolidated and forwarded to the CTEIP Program Element Manager following the end of each month. That necessitates transmittal of the updated subproject detailed reports to the TTD&D Project Director by the 20th day following the end of the month.

The TTD&D Project Director will maintain a file of all submitted monthly reports, all TTD&D project meeting minutes, action items, and TTD&D calendar of events. The TTD&D Project Director, in coordination with the TTD&D Service Agency lead coordinators, will also prepare an End of the Year Report summarizing the accomplishments of each subproject and the utility for continuing the subproject as either a continuing TTD&D subproject or transitioning the subproject into a CTEIP Joint Improvement and Modernization project. The information will be available to the TDD&D selection panel.

DATABASE MANAGEMENT

The TTD&D Project Director will maintain the electronic files submitted by each Service/Agency lead coordinator to provide accurate and up-to-date subproject information

APPENDIX A

DEFINITIONS

6.1 PROGRAMS

Funds research, which includes scientific study and experimentation, directed toward increasing knowledge and understanding in those scientific fields that are related to national security needs. It provides fundamental knowledge for the solution of identified military problems.

6.2 PROGRAMS

Funds exploratory development that includes efforts directed toward solving specific military problems from fairly fundamental applied research to sophisticated prototype hardware study, programming, and planning efforts.

6.3 PROGRAMS

Funds advanced development that includes all projects that have moved into developing hardware and nonmaterial technological prototypes or techniques.

APPENDIX B
CNP SAMPLE FORMAT

TEST TECHNOLOGY DEVELOPMENT & DEMONSTRATION PROGRAM
CANDIDATE NOMINATION PROPOSAL
FOR
(PROJECT TITLE)

Submitted by

(DATE)

CANDIDATE NOMINATION PROPOSAL
CNP

1. **TTD&D Description and/or Identification.** Describe the technology as well as the intended or actual use and/or value of the project. This section should identify which technology that's being investigated/demonstrated and how it's application should beneficially change the way T&E/training is accomplished.
2. **Requirement.** Identify the existing requirement that could be satisfied by the technology. If there is a Test and Evaluation Master Plan (TEMP), provide title, number, and date signed, include as an attachment in Section 9 of the CNP. Address the applicability of the TTD&D project to other DOD Components or Military Services and their interest and support for this project.
3. **Project Goal(s).** Specify the goal(s) of the development and demonstration project and describe how the candidate technology meets the stated requirement.
4. **Other Information.** This section should identify the prime contractor, principle investigator and Service headquarters point of contact, with address and telephone number.
5. **Development & Demonstration Strategy.** Discuss the plan for development of the subject technology and demonstration that this technology has the potential for satisfying and the particular DOD T&E need against which this TTD&D project is nominated. The following will be addressed:
 - a. Provide a preliminary estimate of the quantity of the product that would be fielded, assuming that the decision is made to proceed to deployment.
 - b. Program element(s) that may be planned for supplementing TTD&D funding in the development and demonstration of this project.
 - c. Program element(s) that will fund the deployment; indicate funding by fiscal year.
 - d. Identify any other technology being developed and demonstrated to fulfill this requirement and/or ongoing research and development programs that have the potential to satisfy this need.
6. **Schedule.** Include milestones similar to those shown in the following example. (Where applicable, indicate where these milestones interact with other development or acquisition programs.)

SCHEDULE

	<u>FYXX</u>				<u>FYXX</u>			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
TTD&D Project Initiation								
Contract Signed								
R&D Testing								
Data Analysis/Evaluation								
Final TTD&D Project Report								
Initial Operating Capability								

7. **Budgetary Information.** Tabular input with information similar to that shown in the following example:

BUDGETARY INFORMATION

	<u>FYXX</u>				<u>FYXX</u>			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
R&D								
Test Instrumentation and Equipment								
Data Reduction								
Test Operations								
Support Costs								
Contractor Support								
Shipping								
Travel								
Analysis and Evaluation								
 TOTAL FY					\$XXX		\$XXX	
Service Funding					\$XXX		\$XXX	
TTD&D (CTEIP) Funding					\$XXX		\$XXX	

8. **Funding and/or TTD&D Project Point of Contact Information.** The following information is required to execute timely transmittal of funding documents and related program information:

Name, complete mailing address, and office/fax telephone numbers of the following:

- a. DOD Component or Military Service headquarters staff monitor.
- b. TTD&D Project Manager.
- c. Contact within local accounting and finance office responsible for contracting information for this TTD&D project.

9. **Background Information**. When available, attach information such as company brochures, summary test reports, project briefings, photographs, and other descriptive documentation. In addition, a copy of the applicable requirements documentation shall be attached.

APPENDIX O

ABBREVIATIONS

AAW	Anti-Air Warfare
ASUW	Anti-Surface Warfare
ASW	Anti-Submarine Warfare
BMD	Ballistic Missile Defense
BES	Budget Estimate Submission
BoD	Board of Directors
BoD(ES)	Board of Operating Directors (Executive Secretariat)
BoOD	Board of Operating Directors
C ³ I	Command, Control, Communications, and Intelligence
C ⁴ I	Command, Control, Communications, Computers, and Intelligence
CBD	Chemical and Biological Defense
CDR	Critical Design Review
CTEIP	Central Test and Evaluation Investment Program
CW	Chemical Warfare
DFSA	Defense Finance and Accounting Service
DoD	Department of Defense
DOT&E	Director Operational Test & Evaluation
DPG	Defense Planning Guidance
DRFP	Draft Request for Proposal
DT&E	Development Test & Evaluation
DTSE&E	Director, Test, Systems Engineering & Evaluation
DTTSG	Defense Test & Training Steering Group
EC	Electronic Combat
EMD	Engineering and Manufacturing Development
FCT	Foreign Comparative Testing
FOC	Full Operational Capability
FTP	File Transfer Protocol
GFE	Government Furnished Equipment
GFM	Government Furnished Materials
IOC	Initial Operational Capability
IPT	Integrated Product Team
JIM	Joint Improvement & Modernization
JPO(T&E)	Joint Program Office (Test & Evaluation)
JTTOCS	Joint Test & Training Operations Control System
JTTRR	Joint Test and Training Range Roadmap
LFT&E	Live Fire Test & Evaluation
LCSP	Life Cycle Support Plan
MOU	Memorandum of Understanding

MILCON	Military Construction
MRTFB	Major Range & Test Facility Base
O&M	Operation & Maintenance
OMB	Office of Management and Budget
OSD	Office of the Secretary of Defense
OT&E	Operational Test & Evaluation
PB	Presidents Budget
PBD	Program Budget Decision
PD	Project Director
PDR	Preliminary Design Review
PEM	Program Element Manager
PMP	Project Management Plan
PMR	Project Management Review
POM	Program Objective Memorandum
PPBS	Planning, Programming, and Budgeting System
RCC	Range Commanders Council
RDT&E	Research, Development, Test & Evaluation
REP	Resource Enhancement Project
RFP	Request for Proposal
SDR	Software Design Review
S&TI	Science and Technical Intelligence
T&E	Test & Evaluation
T&E EA	Test and Evaluation Executive Agent
TCBA	Test Capability Benefit Analysis
TCMP	Test Capability Master Plan
TCRD	Test Capability Requirements Document
TECNET	Test & Evaluation Community Network
TECWEB	Test & Evaluation Community Web
TEMP	Test & Evaluation Master Plan
TERC	Test & Evaluation Resource Committee
TERIB	Test & Evaluation Reliance and Investment Board
TIRIC	Training Instrumentation Resource Investment Board
TIS	Test Investment Strategy
TMD	Theater Missile Defense
TPD	Test Package Directive
TRMP	Test Resource Master Plan
TSPI	Time Space Position Information
TTD&D	Test Technology Development and Demonstration
UAV	Unmanned Aerial Vehicle
USD(A&T)	Under Secretary of Defense for Acquisition & Technology